Travels In British Guiana.

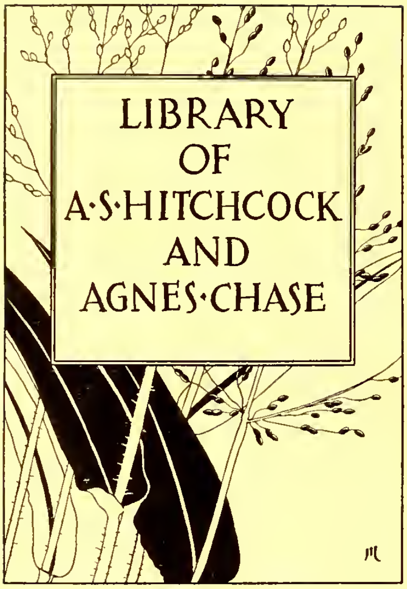
Richard Schomburgk,
1840-1844.

DAMUS PETIMUSQUE VICISSIM

Volume I.

Translated
By
Walter E. Roth.

SHOUT
SHARE
IT



LIBRARY
OF
A·S·HITCHCOCK
AND
AGNES·CHASE

F
2368

RICHARD SCHOMBURGK'S

TRAVELS IN BRITISH GUIANA
1840-1844.

Translated and Edited, with Geographical and General Indices, and Route Maps,

BY

WALTER E. ROTH,

B.A. (OXON), M.R.C.S., (ENG.,) L.R.C.P., (LOND.)

Stipendiary Magistrate of the Demerara River District, Author of "North-Queensland Ethnography," "Animism and Folklore of the Guiana Indians," "Arts, Crafts and Customs of the Guiana Indians," Etc.

2 5 1989
LIBRARIES

VOL. I.

PUBLISHED BY AUTHORITY.

"Daily Chronicle" Office, Main Street, Georgetown.

1922.

EDITOR'S PREFACE.

Some thirty years ago, when strolling along the ponds in the Queensland Botanic Gardens, Brisbane, I gazed in wonder and awe at the lovely *Victoria Regia* lilies which just then happened to be in bloom: I never dreamed in those days that I should live to visit their native home in the reaches of the upper Rupununi River. It was the first occasion that gave me the name of Schomburgk, their discoverer, which thus fixed itself upon my memory for all time.

Twenty years later, whilst annotating the literature bearing on Guianese Ethnography, I had the pleasure of perusing in the original, Richard Schomburgk's Travels, and was at a loss to understand how such a monumental, so interesting, and valuable a work, had become forgotten as it were, and had never been "done into English," since it deserves to rank with the highest works on South American travel and adventure.

On the other hand I regret to admit that almost every subsequent writer on Guiana has stolen more or less of the subject matter without acknowledgment. I read the work a second time, as few can escape doing, who taste of its delights, and was determined that as soon as circumstances permitted I would try to convey some of the enjoyment and instruction that I had derived, to others favoured with less linguistic advantages—surely the Creoles will be anxious to learn something reliable about the autochthonous natives,, the geology, mineralogy, and general natural history of their own country, set out as these are in as attractive a form as Waterton's Wanderings or Defoe's immortal though mythical Robinson Crusoe.

The translation itself has occupied the whole of my time that could be spared from official duties during the past eighteen months. It would be idle to deny that I have met with many and many a difficult passage, but these have been invariably cleared up by my friend, Rev. J. B. Biezer, S.J., of the Santa Rosa Mission, Moruka River, who has invariably and most ungrudgingly rendered me most valuable assistance and encouragement.

The original work consists of three volumes, the first and second of which are devoted to the narrative of the Travels proper: the third is practically a catalogue of the fauna and flora, compiled by various well-known specialists. As a large proportion of the names in this compendium are obsolete, as well as for other reasons, a translation of the third volume has not been considered desirable. So again, the Appendix to the second volume, consisting of a few short vocabularies, and an extract from Missionary Quandt's Arawak Grammar have likewise been omitted.

With a view to bringing Schomburgk's record up to date, I have been in direct communication with the following three gentlemen whose authority in their respective lines of research is unassailable—Mr. E. E.

Winter, B.Sc., Government Geological Surveyor, has thus supplied me with certain foot-notes (E.E.W.) relative to the geology and mineralogy; Dr. F. G. Rose, Government Bacteriologist, has similarly given me valuable information (F.G.R.) with regard to Medicine and Sanitation, while Mr. James Rodway, F.L.S., the Curator of the Museum and our Colony's Historian (J..R.) has made many a sacrifice of time, labour and patience in searching up the latest references to the natural history and antiquities.

I have also to thank my son, Mr. Vincent Roth, Warden and Government Surveyor at Arakaka, for drawing the maps and for the thankless task of typing the whole MSS. for the printer. Strange to say, the greatest portion of the typing was done in his boat whilst travelling, or at night in camp, often to the huge wonder, and occasionally to the terror of unsophisticated Indians who had never seen a typewriter before: many of them descendants of those actually described in the subject matter.

Unfortunately, on account of the alterations in the limits of the colony as a result of the Boundary Commission, as well as owing to the omissions and orthographical errors in the most recent (1913) Official map, it is impossible to follow the large majority of Schomburgk's Travels on it, while the Official map of 1875 is out of print. The original spellings of the names as given in the Travels, etc., and 1875 map are accordingly retained, their modern equivalents, if marked at all in the 1913 map,—over fifty per cent. have been omitted—being shown in the Geographical Index which has been inserted on the suggestion of Hon. C. Clementi. The charts illustrating the respective journeys have been drawn from the latter map with which so far as physiography is concerned, fault can perhaps only be found in its mapping of the far western area.

Mr. S. M. Loquan, our well-known local photographer, has very kindly supplied me with the negatives of the original illustrations.

For a succinct account of the labours of the brothers Schomburgk, I would refer the reader to the very interesting and instructive article "The Schomburgks in Guiana" by Mr. James Rodway, F.L.S., published in Timehri Vol. III., New Series 1889.

WALTER E. ROTH.

Georgetown,
July, 1920.

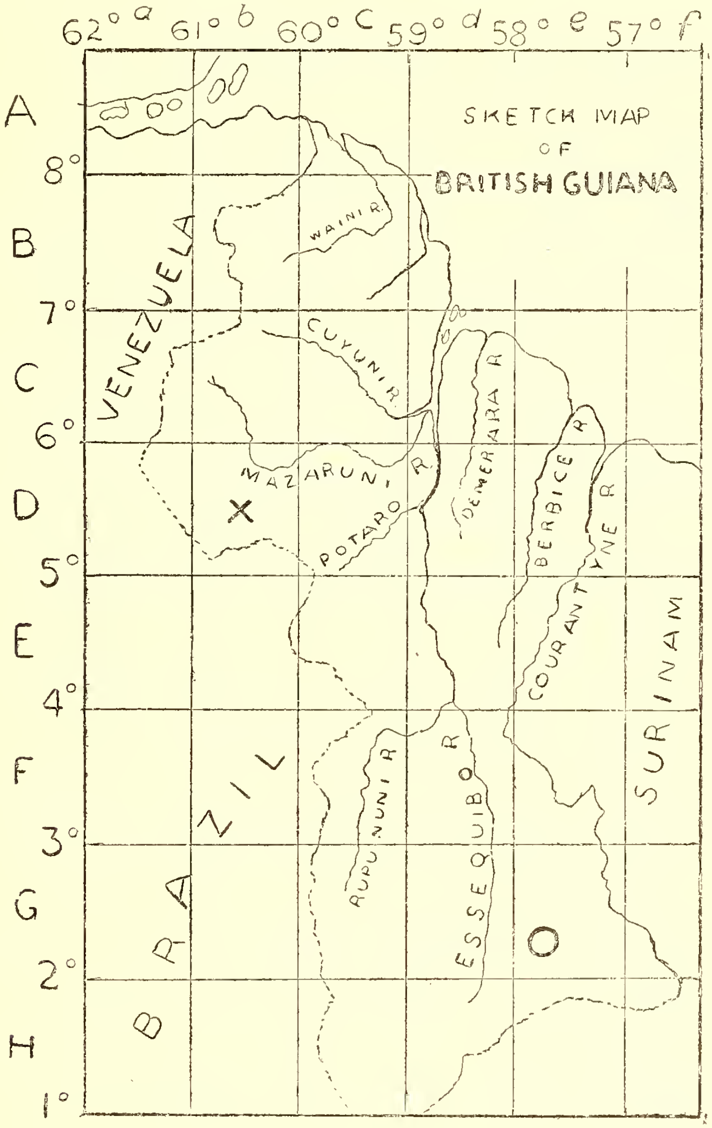
ERRATA—VOL. I.

PAGE.	LINE.						
1	2	from	bottom	*for*	living	*read*	lying
6	3	,,	,,	,,	than	,,	that
13	23	from	top	,,	reputuation	,,	reputation
25	21	,,	bottom	,,	honestly	,,	dishonestly
25	7	,,	,,	,,	Steyomgia	,,	Stegomyia
30	5	,,	,,	,,	probably	,,	probable
44	2	,,	,,	,,	Essequebo	,,	Essequibo
55	13	,,	,,	,,	Coralldendron	,,	Corallodendron
87	6	,,	top	,,	above five	,,	about five
88	28	,,	,,	,,	Rhixoboleae	,,	Rhizoboleae
99	10	,,	,,	,,	Jaku	,,	Yaku
113	11	,,	,,	,,	Cumacka	,,	Cumaka
113	8	,,	bottom	,,	Poiteani	,,	Poiteaui
142	1	,,	,,	,,	Mouut	,,	Mount
143	14	,,	top	,,	Jakus	,,	Yakus
229	21	,,	,,	,,	Halicus	,,	Halieus
304	1	,,	,,	,,	Orinoko	,,	Orinoco

GEOGRAPHICAL INDEX.

EXPLANATORY NOTE.

British Guiana comprises an area of territory lying approximately within eight degrees of latitude (1°—9° N.) and five degrees of longitude (57°—62° W.). In the accompanying sketch-map, the interlatitudinal spaces of country are designated by the capital alphabetical letters A B C............H, and the interlongitudinal portions by their corresponding italic ones *a b c............f*. Hence, any portion of the land under consideration can be described through the combination of any two of such letters: thus, the spots marked by a cross (×) and by a nought (o) can be more or less accurately located as D*b* and G*c*.


SKETCH MAP
OF
BRITISH GUIANA
62° a 61° b 60° c 59° d 58° e 57° f
A
8°
B
7°
C
6°
D
5°
E
4°
F
3°
G
2°
H
1°
VENEZUELA
WAINI R.
CUYUNI R.
MAZARUNI R.
POTARO R.
DEMERARA R.
BERBICE R.
CORANTYNE R.
SURINAM
BRAZIL
RUPUNUNI R.
ESSEQUIBO R.
X
O

The official map of the Colony published in 1875 was based mainly on the results of Sir Robert Schomburgk's discoveries: it is now out of print and very scarce. That of 1913, the most recent, owing to its omissions, orthographical errors and alterations is useless for tracing the journeys described in the text. The 1846 map, to be occasionally referred to, is the one drawn up by Sir Robert and inserted at the end of the second volume of his brother's "Travels."

The Index includes in its first column all the names to be found in the 1875 map as well as those not so marked but mentioned in the text.

The abbreviations employed are as follows:—

C = Cataract, Fall, Rapids, Etc. I = Island.
L = Lake. M = Mountain, Hill, Range, Rocks, Etc.
P = Point. R = River, Creek, Stream, Channel, Waterway, Etc.
V = Village, Settlement, Mission, Plantation, Estate.

The second column lists the two-letter combinations indicating, by latitude and longitude, the area wherein the required place or spot may be found on the map. The third contains the place-names as published in the 1913 map and its leaflet, the so-called Corrected or Errata List (C.L.) subsequently issued: where identical with those of the 1875 map, the similarity is shown by the letters Ib., and where omitted the space is left blank. The fourth column includes remaining remarks and references to the sections in one or other volume of the present text.

W. E. R.

* * *

1875		1913.	
Aapow R.	Db	ib.	
Ababbo R.	Ce	Andabo	
Abari R.	Ce	Abary	
„ Itabbo	De	„ Itabo	
Abary R.	Ce	ib.	
Abenacari R. or Groote Creek.	Cd		Albany-cary in i. 268
Aberiwiku C.... ...	Cc		
Abocotté R.			i. 666.
Aburakuni R. ...	Bc	Akurukuni	
Acarabisi R. V. ...	Bb, Cb	Akarabasi R.	
Acassi R.	Bc		
Acayu C.			See Accawai C.
Acayu I.	Cb		
Accawai C.	Cd	Akaio	Acayu in 1846 map, i. 667.
Accobenang M.	Dc	Akobenang	
Accourou R.	Cb	Akourou	
Achramucra Rocks ...	Ed	Akaramukra	
Ackar V.	Db	Akar	
Acotura R.	Cc		
Actayou R.	Fd	Aktayau	
Acuiwaugh C. ...	Cc	Akaiwang, Akaiwong (C.L.)	
Acurabo I.	Cd		
Acuramatalli Rocks ...	Dd		Mistake for Akramallali
Acure R.	Ba	Akure	
Acusi-andova I. ...	Ed		
Acuyuro Point ...	Cd		
Agatash V.	Cd	ib.	
Ahara C.	Cd		Aharo in i. 710, 716.
Aikoni R.			Throughout text and 1846 map. See Akawinni
Aikuwe M.	Gc		
Aimutong M. or White M.	Eb		
„ R.	Bc		
Airopa R.	Eb		ii. 379
Airy Hall V.... ...	Bd		
Akaiwanna C.M.R. ...	Ed	ib.	
Akaiwatta C	Dd	ib.	
Akalikatabo I. ...	Ee	ib,	
Akamaru M.	Fb		
Akawinni R.	Bd	ib.	See Aikoni
Akayekyuru R. ...	Bc		
Akramallali C. ...			ii. 781. See Acuramatalli
Akuina R.	Dd	Akenna	
Akupautari V ...			ii 822, & 1846 map. Carib V. below the Makaiku
Alapalisso R.... ...	De	Alapaliso	
Albany-cary R. ...			See Abenacari
Albion Canal... ...	Ce	Albion	
Aliki P.R.	Cd	ib.	
Amacura R.	Ab	Amakura	
Amailah C.R. ...	Dc	Amaila	
Amatopo, or Great Channel	Ed		
Amboina Rock ...	Eb		
Amileyah R.	Bc	? Anaida	
Amissi Itabo... ...	Bc	Anabisi R.	

1875		1913	
Amneu Ranges			ii 151
Amoquock R.	Dc	Amakwa	
Amoro R.	Dc		
Ampa R.V.	Cd	ib.	
Amucu or Parima L.	Fc	Amuku	
Amutu C.	Dc	Amatuk	
Anaimaper V.	Dd		
Anapari R.	Ab		
Anaparie V.	Bc	ib. R.	
Anapu-yeng M.	Eb		
Anarabisi R.	Cc		
Anarasso R.	De	Anora	
Anarhoo R.	Bc	Ananu	
Angel Custodio V.	Ba		
Anira R.	Cd		
Annai M. V.	Fc	ib	
Anna Regina V.	Bd	ib	
Annawai R.	Da	Wenawai	
Annay R.	Fc	Annai	
Ano-baro R.	Dd	ib	
Anodoolie R.	Bc	Anaturi	
Anomorisi R.	De		
Aourimé Inlet	Fd		
Apaegua C. I.	Bc	Apekwa	
Apamapo M.	Eb		Apamapa, ii 411
Apanachi R.	Dc	ib	
Apangwau R.	Ca	Apongwau	Br. of Wenamu.
Apangwau R.			Mistake for Apauwanga.
Apauwanga R.	Da	Apongwong	ii 463 ; br. of Caroni
Apayabo-Optayo M.			i. 830,
Apikiburu I.	Ee	Flat-rock	
Apikong R.	Fc	Appaipong	
Aping R.	Cb	Eping	
Apiniau R. or Caphiwuin R.	Hd	Apinau, Apiniau (C.L.)	
Apoacka R.	De	? Hubudi	
Apotoacuru R.	Dc	Apotoakuru	
Apotree V.	Fd	Apoteri	
Appa			See Appapara
Appakai R.	Db	Apakai	
Appapara R.	Cc	Appaparu	Appa in i. 667 and 1846 map.
Appayé M.	Ca		
Apqiana R	Bc		
Apuru I. R.	De	Apoera	
Apuyabanabo I.	Cd		
Aquarapu R. V.	Cc	Akwarapu R.	
Aquire R.	Ab Ba	Aguirre	
Aracasa C.	Cd	Arakabusa Mama	
Aracuna R.	Cc		
Araguao I. Channel	Aa Ab	ib I.	
Aramatau R.	Gf	ib	
Aramisari Irupacu or Gluck I.	Dd	ib	
Arampa M. R.	Dd	ib R.	
Aranka R.	Bc	ib	
Araparu R.	Db Eb	Arabopo	See Arapu,

1875		1913	
Arapiaku R.	Bd	Arapaiko, Arapiako (C.L.)	Arapiacro in ii 798.
Arapiro Cuyaba P.	Dd		
Arapu R.			A mistake for Araparu.
Araquai R.	Gc	Arakwai	
Ararisi R.	Bc		
Arascuca M.	Cb	Dome M. (Arasuka)	A Mistake for Arasuca.
Arasuca M.	Ed	Arasuka	
Aratiari C.	Fb		
Arature R.	Ab	ib	Araturi in i 416.
Arawanna Rock			In 1846 map. (Fb). ii 333.
Arawapai R.	Bc	Waini	See footnote to Waini R.
Arawasi I.	Cd		
Arawayam V.	Da		In 1846 map, though spelt Arawayang in ii 431, 630
Archiecullock V.	Ec		
Archimeper R.	Db	Archimepir	
Ardakeur M.	Gc		
Areoayo R.	Cd		
Arikanang V.	Ca		
Arikataro R.	Dd	Kurra-Kurra	
Arikita M.	Ac		
Arimisse R.	Dd	Arimisu	
Arinda, Post	Ed		
Aripai R.	Fc		V. in ii 756
Arissaraboo R.	Dd	Arisarabo	
Arissaro C.	Cd	Arisaru	
Arissaro M.	Dd	Arisaru	
Arissoa R.	De	Arisoa or Suzanne	
Aritacca C.	Cd	Aritaka	
Aritaka C.			Aritacca C in i 693, 703, 781
Aritapu C. or Lord Stanley's C.	Fe	ib	
Ariwaiyang M.	Ea Eb		Arawayang in map on frontispiece to Vol. I.
Armatani R.	De		
Arnick R.	Ec	Arnik	
Arnie R.	Db	Arni	
Arobeya R.	Cd	Aroabaia	Arobaya in ii 975
Arocari R.	Cd	Arawari	
Aroma R.	Dd	Arauma	
Arowawa R.	Dd	Ariwina or Arikabuka	
Aroyawang Rock	Db	ib	
Arraia R. V.		Araia Itabu (Bd)	ii 824, 842 and 1846 map
Arraqua R:	Cd		
Arrisaroo R.	Dd	Arisaru	
Arroaky R.	Dd	Aroakai	
Aruabunicu I.	Dd		
Aruaka Umatuba C.	Cc	Arrawak Matope	Mistake for A Ematuba.
Aruan or Tokutu Inlet	Ed	Takutu Pond	
Aruararua C.	Gd	ib.	
Aruatimau M.	Gc	ib.	
Aruatintiku M.	Gc	ib.	
Aruau R.	Ac	ib,	
Arucabaru R	Ab		
Aruguaito Channel	Aa		
Aruka R.	Ac Bc	ib.	

1875		1913	
Aruma R.	Bc		
Arunamay R.		Aranamai (Bd)	ii 846
Aruparu R.	Bc		
Aruta R.	Bc	ib	
Aruwai C.	Cb	ib or Kurabana	
Arwarimatta Bluff			ii 647
Asacota V. R.		Assakata (Bc)	i 587, ii 890, 899 and in 1846 map.
Ascida Vaya Inlet	Ac		
Asecura V.			i 412. On the Otucamabo
Ashieparu R.	Db	Ashiparu	
Assicure Inlet			i 826. On the Rupununi
Assie R.	Cb		
Assirikanna I. R.	De		
Assura V.	Dc	Asura R.	
Atacock I.	Cb		
Ataima Channel			See Gaima Channel
Ataraipu M.	Gd	ib	Aturiapu on 1846 map.
Atha R.	Bb Cb	ib	
Atopani R.			i 305, near Cumaka V., Aruka R.
Atora V.	Gd	Altora	
Aturiapuru R.	Gd	ib	
Aturona R.	He	ib	
Aunama R. V.	Bb	ib	
Aurantipu M.	Ca	Arau	ii 650
Aureara or Oreala R.	De	Orealla	
Aurora V.		Aurora (Bd)	i 647
Aurouria R.	Cd	Arabour a	
Au-uraparu M.	Gc	Auuru-paru	Au-uruparu in ii 195, and in 1846 map.
Avanavero C.	Ee	ib.	
Awaeaparu R.	Bb		Misspelt Awaeapsru.
Awairaparu R.	Ec	Awarapialli	
Awaramani R.	Fc		
Awaramatari M.	Fc		
Awarayam V.			Intended for Arawayam
Awaricuru R.	Fc	Awarikuru	Tawarikua of the older maps: see i 846
Awarra or Waruwau R.	Gc	Arariwau	Br. of Rupununi R.
Awarra R.	Ac	Awara	Br. of Amacura R.
Awarra V.	Fc		Misspelt Awarru
Awarrawownow V.	Gd		
Awarretequibi M.	Gc		Awarretequi in ii 699
Awarrimani R.	Fc		
Awendaparu R.	Cc	ib.	
Awerrima R.	Ac		
Ayangcanna M.	Db	Ayanganna	
Ayangcatsibang M.	Da	Eastern portion of Iruarkaruima M.	
Ayangike M. R.	Cb	ib.	
Azapu R.	Eb	Arabopo	
Azidaia R.	Ac		
Baboon I.	De	ib. Little and Big	
Badawareen R.	Cd		
Baiara R.	Bd	Biara	

1875		1913	
Bajo del Burro I. ...	Ab		
Bakurua R.	Gc	ib.	
Bamberry's V. ...	Bd		
Bamboo or Rappu R. ...	Ed	ib.	
Bamia R.	Cd	ib.	
Banimi R.	De	Banim	
Barabara I. R. ...	Cd		
Barabara R.	Bd	ib.	
Baracara R.	De	Barakara R. and Mission	
Barama R.	Bb Bc	ib.	
Barapang V.	Ea		
Baribara R.	Dd	ib.	
Barima P.	Ab		
Barima R.	Ab Ac Bb Bc	ib.	
Barimani R.	Bc	Baramanni	
Barrotika R.	De	Bartica	
Barrow's, Sir J., or Wotototobo C. ..	Ee	ib.	
Bartika Grove V. ...	Cd	Bartica	
Barucaribana R. ...	De		
Bassama, Cano ...	Ab	ib.	
Bataria I.	Cd		
Belle Alliance V. ...	Bd		
Bemburu C. ...	Cc	Bembaru	
Benhuri-bumocu ...	Dd	Benhori-bumoko	
Berbice R.	Ce Fe	ib.	
Berebisi R.	Cc		Left bank Cuyuni
Berebisi R.	Cc	Big Arimu	Right „ „
Berkutoni V.... ...	Fc		
Berlin			ii 989
Bird I.	Bd		
Birmingham or Swarte Hock P. ...	Cd		
Bisseroony R.... ...	De	Bissaruni	
Bluff Point	De		
Boca de Navios or Great mouth of Orinoco	Ab	ib.	
Bodali I.	De		
Bodetika R.	De		
Boesel R. or Macouria R.	Cd	Makauria	
Bonasica R.	Cd	Bonasika	Bonasika in i 669, and 1846 map.
Bonoima R.	Ab		
Bononi R.	Fc	Benoni	
Borisiri R.	Cd	Boerasiri	
Borselen I. ...			ii 973,
Botanamo R.	Ba	ib	
Botuta R.	De	Bududa	
Branco, Rio			See Parima R.
Brandwagt Canal ...	De	Brandwegt R.	
Brenasi R.	Cb		
Brothers. Three. I. ...			i 251.
Brothers V.	Dd		
Bubamana C.... ...	Gd	ib	

1875		1913	
Buburi-bunacu Hills, I			See Benhuri-bumocu.
Buckhall V.	Cd	Buck Hall	
Bunowow R.	Gd	Bunowau	
Buonaparte or Snake I.	De		
Buraburacocabra R.	Dd		
Buria-banalle I.			i 248.
Burrabaye R.	Hd	ib	
Burrecurrua R.	Gd	Burrekurua	
Burro-Burro R.		ib	
Burroparu R.	Bc		
Burukutuauyari M.	Fc	Bulakuk-taba-ial	The 2nd u is omitted in 1875 map.
Buruwaiwini R.	Ac		
Butcher's Canal	Ce		
Buti-vanuru R.	Ce		ii 181. Head of the Takutu
Cabalebo R.	Ee	Kabalebo	Capaleppo of Sir W. Raleigh.
Cabarooda V.	Fc		
Cabauer R.	Ce		
Cabeiari R.	De	Kaboyari	
Cabouria R.	Dd		
Cabowera C.	Dc	Kabuwira	
Cabuni R.	Dc	Kaburi	
Caburi R.	De	Kapoeri	
Cacoparita R.	Bc	? Mobebaru	
Cadiva V.	Ca		
Cadui V.	Bc		i 666. In 1846 map.
Caieruni R.	Cd	Kairuni	
Caiguao	Ba		
Caino R.	Eb	Kaino	Cuino in ii 415, and 1846 map.
Cako R.	Da	Kako	See note to Cuyara R,
Cakoparu R.	Db	Kakaparu	
Calabash Creek	Ce	ib	
Calabash Creek, Little	Ce		
Calarucana L.	Fc	Kalarukana	
Calishadaker M.	Gd	Kalishadaker	
Callo C.	Cc		
Caluhui R.	Fc		
Cama R.	Da	Kama	
Camacabra	Dd	Kamakaora	
Camacusa M. V.	Db	Kamakusa	
Camaikariba or Maycar R.	Gc	Makudud.	
Camaimura R.	De		
Camaka V.	Ac		
Camana M.	Eb		ii 387. See Carzana M.
Camaranna M.	Fb		
Camarapa R.	Fc	? Wamukarru	
Camarazin M.			See Cumarazin
Camaria C. I.	Cd	Kamaria	
Camequear R.	Cd	Kamekwear	
Cammoni R.	Cd	Kamuni	
Camoa or Wanguwai R.	Hd	Kamoa	
Camooda M.	Db	Kamuda	
Camoodicapoora R.	De		
Camowta C.	Eb		
Camoyepaugh			Sun R., Rupununi, ii 708.

1875		1913	
Camu R.	Fc	Kuma	Br. of Takutu
Camu or Sun R.	He	ib	,, ,, Caphu
Camuran R.	Ca		
Canaiyu C.	Hd	Kanaiyu	
Canal, Nos. 1, 2, 3,	Cd	ib	
Canaru R.		Kunaruwau (Gc)	ii 202 : in 1846 map.
Canaruck M.	Dd	Konawaruk	Caramucu of 1846 map : i. 729
Canaupang M.	Da.		
Caneima I. Channel	Ab	ib	
Canjé R.	Ce. De	ib	
Canoacaburi R.	De	Konakaburi	Kanakaburi (C L).
Cano Bassama or Wai-ica-cari Passage	Ab	ib	
Canuku M.	Fc	Kanuku	Cunuku in 1875 map, ii 49. Older forms are Conokon, Cumucumu
Canyaballi V. R.	Bc	Kaniaballi R,	
Capaleppo or Cabalebi			See Cabalebo R.
Capaya R.	Fc	Bashar-wau (Kapaya)	ii 40
Cape Nassau	Bd		
Caphiwuin or Apiniau R.	Hd	Caphuwin, Caphiwuin (CL)	Kaphu in ii 927
Caphu R.	He Hf	ib	Kaffu in ii 941 : Kaphu or Trombetas in 1846 map
Capoey R. L.	Bd	ib	Capouye in i 647
Capouye			See Capoey
Capuyena R.	Da	Karowlieng R.	
Carabaro I.	Cd	Karubaru	
Carabiru C	Gd	Karabiru	
Carabo R.			See Corabo
Caracara R.V.	Ec	Kara-Kara R.	Br. of Ireng
Caracara R.	Cd	Karakara	,, ,, Demerara
Carakitta V.	Ea		
Caramang R.			See Carimani
Caramuzina M.	He	ib.	
Carapa (paou) I.	Ce		
Carapo Channel	Ab	ib	
Carapu R.	Ab Ca	ib.	
Carapu R.	Ca	Karapu	
Carauringtipu M.	Da	? Southern portion of Irutipu M.	
Cara-utta M.	Ca	Karamutta	ii 645.
Carawaimentow M.			Carawaimi in i 795, ii 714, 732, 909 : and in 1846 map.
Carawaimi M.	Gd	Karawaimentow	
Carawaramu C.	Dc	Karawarambo	
Caraweweowtow M.	Gc		
Carchieparu R.	Ed	Carchiparu	
Careawa or Caruawa R	Bc	Koriabo	
Caremalambo I	Ee	Karemalambo	
Carenacru V.	Fc		
Caria I. R.	Cd	Karia I	
Cariacabally R.	Dd		
Caria-Caria Mission Stn.			i 267.

1875		1913	
Cariacu V.		Kariakau R. (Bc)	V. in 1846 map: neither V. nor R, in 1875 map; i 665, ii 882,
Carighieri C.	Cd	Korehere	
Carimamparu M.	Ea		
Carimani R.	Da Db	Kamarang	Carimani R, ii 632: also Caramang R.
Carinambo V.	Fc		Kirinampo in 1846 map and i 833
Caripico R.	De		
Cariry R.	De	Koriri	
Carnieparu R.	Db	Karn paru	
Carona C.	E	Karona	ii 17: wrongly spelt Caroni in 1875 map
Caroni R.	Da	ib	
Carowa-satowa C.	Dc	Karowa-satowa	
Carowouring R.	Db	Karowrieng	
Carowtibeu M.	Db	Karowtibeu	
Carsona R.	Hd	ib	
Cartabo Point	Cd	Kartabu	
Cartoone R.	Cc	Kartuni	
Cartoonie R. V.	Cb Cc	Kartuni	
Cartowerie C.	Dc	Kartauri	
Caruapu	Ac	Koriabo	
Caruawa or Careawa R.	Bc	Koriabo	
Carubung R.	Cb	Kurupung	
Caruputa V.	Ec		
Carutoka or Orotoko C.	Ed	Kuratoka Rapids	Curutoka in 1846 map and ii 769.
Carzana M.	Eb		Mistake for Camana.
Casowebie R.V.	Gc		
Cassamapari R.	Bc		
Cassato M.			See Cursato
Cassi or Turtle R.	De	Tiger	
Cassi-Attae C.M.R.	Gd	Kassi-attae	
Cassikityu or Yuawauri R.	Hd	Kassikaityu, Kassikityu (C.L.)	
Cassowa R.V.	Db		
Catharinensburg V.	De		
Caticaboora R.	Dd	Katikabura	
Cativau-uru or Scabunk R.			See Catuau-aru
Catoparu R.	Dc	Katoparo	
Catuau-aru R.	Ge	Kati-wau	Catua-auuru (ii 699): Catu-auuru (ii 67).
Catunariba V.	Gc		
Cauaruwow R.	Gc	Kowari-wau	
Cauratipu M.	Da		Kaurutipu in ii 642,645 and 1846 map.
Cau-urua V.	Gc		ii 202. Wrongly spelt Cua-urua in 1875 map.
Cawulibar V.	Fc		
Cayan I.	De		
Caycotiny R.	De	Kaikotin	
Caywack V.	Db	Kaywaek	
Cebezic R.	Cb	Kebezik	
Ceraquiparu R.	Cb		
Chantilly I.	Cd		
Chemabiepping M.	Eb		

1875		1913	
Chemapeur R. ...	Eb	Chimepir	
Chichi C.	Db	ib.	
Chipedarinow V. ...	Fc		
Christianburg Saw Mill...	Cd	Christianburg	
Coarawow V.	Gc		
Cinewyny R.			i 637. Small creek 1½ mile above Akawinni creek: shewn in Bouchenroeder's map as Zenewyne.
Cliff, The ...		The Klip (Cd.)	i 649.
Coatsay R.	Db		
Coatyang Kityu, or Essequibo, or Sipu R. ...	Hd	ib.	
Cobanatout C. ...	Dc	Kobanatuk	
Cocali Point	Ad		
Cocobeanaruwow V. ...	Gc		
Cocoya C.	Gc	Kukui-paw(a)	
Cohina R.	Bc	Kwiakwi	
Colie V.	Dd		
Comang R.	Cb	Komang	
Comarikok R. ...	Db	Kamarikak	
Comparu R.	Dd	Kumaparu	
Congoo R.	Db	Kangu	
Congrejos or Crab I. ...	Ab	Cangrejo or ib.	
Coniapeur V. ...	Ec		
Consego I. and Channel	Aa		
Conterbisi R.	De	Kontrabisi	
Conumo R.	Ba		
Cooliserabbo	Dd	Ku'iserabo	
Coomacaba M. ...	Gd		
Coomacowrie R. ...	Gd	Kumakowri	
Coomaro R.	Cd		
Coomlamana C. ...	Cd		
Copana R.	Dd	Kwapanna	
Copang R.	Cc	Kopang	
Corabo R.			ii 498, but Carabo in ii. 502: a branch of the Yawaira
Corentyne R. ...	Ee, Gf	Courantyne	See ii 917 for Curitani etc.
Coreta R.		Korita (Dd.)	i 724, and in 1846 map.
Cori R.	Da		
Coroaduik R.... ...	Db	Koroaduik.	
Coronami Itabbo ...	De		
Ccrowicurru R. ...	Cb		
Cortuaharo R. ...			See Curtuahara.
Corua Oboro or Parrot I.	De	Robertson I.	
Cosnequaboo R. ...	Dd	Kushekabra	
Cossequaboo R. ..	Dd	Big Essekwabo	Left bank Demerara R.
Cossequaboo R, ...	Dd		Rt ,, ,, ,,
Cotinga R.	Db Eb	Kwating or ib.	ii 301. Christais of the old Portuguese maps.
Cotoewow V. ...	Gd	Kotoewau	
Couchman's V. ...	Dd		
Counubulli R. ...	Dc	Kunubulli.	
Courahanna R. ...	Cd		
Couricerite R. ...	De	Kuriserit	
Couruabaroo R. ...	Dd	Kuruabaru	

1875		1913	
Coustena P.	Cd		
Cowaeng V.	Db	Kowaeng	
Cowmaroo C.	Cb	Kaumaru	
Cowulibar R.	Fc		
Coya R.	Fc		
Coyoni Passage	Ab	Cuyuwini R.	
Crab C.	Cd	ib.	
Crab I. or Congrejos I.	Ab	ib. or Cangrejo I.	At mouth of Orinoco
Crab I.	Ce	ib.	,, ,, ,, Berbice.
Creiti. R.	Cd	Kereti	
Creole I.			i. 262
Creole R.	Cd		
Cromeparu R.	Cc	Kromeparu	
Crushiweyu R.	Ac	? Kurosaimo	
Cua-urua V.			See Cau-urua
Cucuie M.	Db	Kukui	
Cucuienam M.	Db	(?) Wokomung	
Cucuya R.	Db	Kukui	Cuya in ii 462, and 1846 map.
Cucuye M.	Fc		
Cuiewah R.	Db	Kuiewa	
Cuino R.			See Caino R.
Cuipaina R.	Ac		
Cuitaro R.	Dd	Kwitaro	
Cuma V.	Cd		
Cumacar R.	Dd		
Cumacka-toto			See Cumakatoto
Cumaka C.	Dd	Kumaka R. C.	
Cumaka R.	Bc	Kumaka	Br of Barima
Cumaka R.	De	Coomacka, Kumaka (C L.)	Br of Berbice
Cumaka V.	Fd	Kumaka	
Cumaka Serrima	Cd	Kumaka Serima	
Cumakatoto or Yucuribi C	Ed		Cumackatoto in ii 772
Cumakiya Kirahagh	Fd		
Cumamo M. R.	Ba		
Cumararing M.	Eb		
Cumarazin M.	Ea		Camarazin in ii 411, 416
Cumaro V.	Dd	Kumara, Kumaru (C.L.)	
Cumarru-marru R.	Dd		
Cumeareparu R.	Dd		
Cumpara R.	Dd		
Cumparuyamou R. V.	Eb	Kumparuyamou	
Cumucumu Range			See Canuku M.
Cumuti M.			See Taquiari
Curibari or Nunu R.	Ab		
Cunuku M.			See Canuku
Cupa R.	Ca		
Cura M.	Dd		
Curabelicabra R.	Dd		
Curabiri C.	Dc	Kurubiru Falls	
Cura-Cura or Ekruyeku R.	Ca	Ekreku, Ekereku (C.L.)	
Curahari I	Cd		
Curahbele C.	Dc		
Curamucu M.			See Canaruck M.
Curaparu R.	Cc	Kuraparu	
Curapua M.	Eb		
Curasanie R.	Bc	Kurasani	
Curassawaka M. R	Fc	Kurawa R.	

1875		1913	
Curatakie M.	Eb		
Curatawuiburi M. ...	Fc		
Curati R.	Gc	Kurati, Sir-wau or Kurati (C.L.)	
Curaticuru I.	Dd	Urarikuru	
Curatipu M.	Da	Kaiatipu	
Curatoka C.	Dd		ii 781: in Essequibo, above Potaro R,
Curatokoa or Warara-aburupug	Cc		
Curatu-kiu V. ...			i 933. Curata-kyu in 1846 map,
Curawashinang V. ...	Gd		
Curetama R. V. ...	Dc	Hubana	
Curewaka R.	Ec		
Curi R.	De		
Curia P.	Cd		
Curiau R.	He Hf	ib.	
Curibiru C.	Ed		
Curicana I.	Cd		
Curicuru P. ...	Dd		
Curiebrong R. ...	Dc	Kuribrong	
Curieparu R.	Ed	Kuriparu	
Curiopo I.	Aa Ab	Kuriapo	
Curipani R.	Hd	Kuripani	
Curishiwini M. ...	Hc	Kurishiwini	Curischiwini in ii 150
Curitani R, ...			ii 917 : Curuni ii 952 : Curuwuini ii 952, 958 959: Corentyne
Curiyopo R, ...	Ab		Curiyapo in text,
Curiyé R.		Koriai (Bc)	i 508 and in 1846 map
Curnayair C, ...			ii 699
Curoweak R, ...	Db	Karoweak	
Curruquah R, ...	Cb	Kurrukwa	
Cursato, Cassato M, ...	Gc	Kusad	Ursato in ii 82
Cursorari R.			ii 98
Curtuahara R, ...	Dd	Kurtuahara	See Cortuahara
Curua or Urua Mission	Fc		
Curuatoko C.	Fe		ii 667
Curuauyari C, ...	Fc		
Curucuku C, ...	Gc		Wrongly spelt Curucku
Curumu R, ...	Ca	ib, or Botonamo	Curuma in ii 654
Curuni R, ...	Gf	Kuruni and Sipariwini	See Curitani R.
Curutoka C, ...			See Carutoka C,
Cururturaba C. ...	Cd	Turtruba	
Curutza R, ...	Fc	Kurutza	
Curuwuini R,... ...			See Curitani
Cutari R.	Gf	Kutari	
Cutatarua C, ...	Gc	Kutata	ii 712, Cartatan or Corona of the Portuguese : Truan of the Wapisianas
Cutoka R.	Fc	Kuratoka	
Cutuabanado I, ...	Dd		
Cutuau R, ...	Cc	Kutuau	
Cutuau Wopuru M, ...	Cc	Kutuau	
Cutzi R.	Da	Utshi	
Cuya R, ...			See Cucuya R

1875		1913	
Cuyara R,		Kwiara (Da) in conjunction with W. br of the Cako	ii 631, not in 1846 map.
Cuyariwaka C,	Ed	Kuyaliwak	
Cuyuni R,	Ca	ib,	Cayma in Condamine's map of 1747
Cuyurara C,	Ab		
Cuyuwini R,	Gd	Kuyuwini	
Daageraad, New. V.	Ce	ib	
Dabaru C	Gc		
Dabinamo R,	De	Taurnama	
Dacara R,	Cd		
Dahalabani R.	Dd	Dehalibana	
Dahdaad V.	Gc		
Dalli R,	Cd	ib	
Daniel V,	Cd		
Danigo M,	Gd	ib	
Dara C.	Cc		
Dauparu R,	Gc	Dowbarwau	
Davora R,			ii 509. Tributary of Zuruma branching into Tupuring and Haiowa.
Deer M.			See Waiking Epping.
De Hoop, site of Moravian Mission	De		
Demerara R,	Cd Ed	ib	
Derrige Hill	Dd	Derriri	
Diaha R,	De		
Dilucko R,	De		
Dochlopan M,		Dakubad (Gc)	ii 703, 714: Dochlapau in 1846 map
Dodowina R,	Bc	Matuaparu	
Doh R,	Da	Tauk	
Dohte R,			ii 909. See Totohwow
Doo I,	Cd		
Dowocaima	Bc	Towokaima	
Doyanari R	De	Torani	
Duburadi R.	De		
Ducoura R,	Dd	Dakoura	
Duida M.			ii 459, In 1846 map,
Duquari C.	Cc	Dukwarri	
Duquari R.	Bb	Tukwari	
Durham Castle V	Bd		
Duriparu R.	Bc		
Duruaru M.	Fb		Spelt Durura in ii 528 and in 1846 map,
Duruau M.	Gc	? Tuhdiku M,	
Durura			See Duruaru
Duruwow V.	Gc		
Eberoabo R.	De	Heroabo Eberoabo (C.L)	
Ecabago R.	Cc	Ekabago	
Echachalack R	Dc		
Echilebar R.	Ec	Eckilebar, Echilebar	
Eckanabua R	Ac	Ekinawina	

1875		1913	
Ekreku M.	Ca	Ekereku	
Ekruyeku or Cura-Cura R,	Ca	Ekreku, Ekereku (C,L.)	
Elechiliqua V.	Ec		
Elissa R.	Dd		
Emataba			See Ematuba
Ematuba C.	Cd	Matope Fall	In 1846 map, i 667,
Embiparu R.	Dc	ib,	
Emoy R,	Ec	ib,	
Enapowou R,	Ec	Chenapowu	
Enawarike	Db		
Encaco V,	Ec		
English Fort	Fc		
Epenie R,	Bc	Ebini	
Epikereek C.	Dc		
Epira R.	De	ib.	
Eramaturu M.	Ea		ii 429, 431
Erawanta R.		Arawanta (Bc)	i 666 : not in 1846 or 1875 maps.See note on Mazuwini
Erematura M.			A mistake for Eramaturu
Erimitipu M.	Ea		Wrongly spelt Erimitepu
Eriwang R.	Fc		
Essequibo or Sipu R, or Coatyang Kityu	Cd Hd	ib.	
Etabo R. V.	Dd		
Ewaboes V.			
Fort I.	Cd		
Fort Nassau	De	ib.	
Fort New Guinea	Fc		
Fort St. Andrew	Ce		
Frendenroest V.	Cd		
Fryer's C,	Gc		
Furako M.	Hd	ib,	
Gaima and Ataima Channels			i 566, between Manari and Barima Rivers.
Gaspun R.	Ca		
Geertruy V.	De		
Georgetown	Cd	ib.	
Giles' Wood Grant	Dd		
Glasgow V.	Cd	ib.	
Gloucester V.	Cf		
Gluck I. or Aramisari Irupacu	Dd	ib.	
Gongo R.	Ce		
Goodall's C	Fe	ib.	
Gordon P.	Df		
Governor Light's C.	Ee	ib.	
Governor Sir J. C. Smyth's, or Mawari Wonotobo C.	Ee	ib.	
Granite I.	Bc		
Granite P.	Be		
Great Cataracts	Ee	Wonotobo etc	
Groote or Abenacari R,	Cd	Groete	
Guainia or Waini R.	Ac	Waini	
Guaran R,	Ba Bb	ib.	

1875		1913	
Guidaru or Quitaro R. ...	Fd Gd	Kwitaro	
Guidiwau R.	Gb	ib.	
Guranta M.	Ca		
Ha R.	Hf	ib.	
Habacuyaha Gt Falls ...	Dd	Habakuia	
Habinalicuri R ...	De		
Haiacker R.	Db	Haiek	
Haiama R.	Cd	ib.	
Haiamahtewik M ...	Db	Haiamatipu	
Haiaparu R.	Dc	Iaparu	
Haiawa (old Mission) ...	Fd	Haiowa	
Haiawaculeh V. ...	Fc		
Haimaruni R.... ...	Bd		
Haimuracabara R. ...	Bd	Haimorakabra	
Haiowa C. I.	Dd	ib.	
Haiowa R.	Ac	ib.	
Haiowa V.	Cb		
Haiowe R.			ii 509.
Halton I.	Cd		
Hanaita R.	Ac	Anaida	
Hanna Wobé R ...	Ac		
Hampshire Fresh Water Path	Ce		
Haradoori R	De	Aduri	
Harly Piak R ...			i 638. East Bank Pomeroon Harly Pyaks in Bouchenroeder's map.
Haughetika M ...	Gc		
Hawerorini R	Cd	Hauraruni	Used to be known locally as Kokabai i.e. Leprosy Creek
Haymura Caboora R ...	Cd	Haimorakabra	
Heherap V.	Gc		
Heraculi R	De	Harakuli	
Heteruni M R. ...	Dd		
Hiaparu R.	Ec	Haiaparu	
Hibbeba R.	Dd	Hibibia	
Hill Mission V ..	Bd	Kabakaburi	
Himaroome R. ...	Dd		
Hipeya V.	Cd	Hipaia	
Hitia Hill	De	Hitia Sand Hills	
Hobocuru R	Cd	Hubu	
Hocoba R.	Bc		
Hog I	Cd	ib	
Homeparu R	Cc	ib	
Honicuri-yiatzo M. ...	Hd	Honikuri-yiatzo	ii 927
Honobo R. V. ...	Bc		
Hooboo R.	Dd	Hubudi (? V)	
Hooge, ter			i 638
Hoop, de	De		Site of Moravian Mission
Hoorabea R.	Cd		
Hoororomouni R ...	De	Hororomoni Hill	
Hope V.	Dd		
Hope Town V. ...	Cd	ib	
Houerembo R. ...	Bc	Warimba	
Hoya V.	Cd		

1875		1913	
Hoyowanini R,	Bc	Hoyoma	
Hoyowaini Sanica R	Bc	Hoyoma	
Hubabu R,	Cd	ib	
Hubana V,	Bc	? Kwabanna	
Hubucuru I	Dd		
Huena R	Bc		
Humeseta V			ii 411 Between the Zuappi and Cuino
Humirida M	Eb		
Hyaqwa R	Dd	Haiakwa	
Hymoracabra R	Dd		
Ibini R	De	Ebini	
Icalefo I	De		Kabalebo
Icurua R.	De	Ikuruwa	
Ikopu R	Fd		
Ikuribisi R	Cd	ib	
Ilamikipang M	Fc		
Illewan R	Dc	Uewang	
Illuie Peak	Dc	Illui Peak	
Imanicurru R	Bd	Kabosaina	
Imataca I.V	Aa	Imataka	
Imataca M (in two places)	Ba	Imataka	
Imataca R	Aa	Imataka (Curucima)	
Immapara Gt, C.	Ca	? Kakaraima	Immapura in 1846 map.
Imoti V	Bc	Imotai R	
Inamute V	Fc		
Inana R	De	Nanni	
Inaparu R	Dd		
Ipelemouta V	Db		
Ipobe R	Dc	ib	
Ipomucena I	Fc		
Ipotticurru R	Bc	Ipotaikuru	
Ipuru R.	Cc	Ipuri	
Iquari M.	Fc		
Irawakenna V.	Fd		
Ireng or Mahu R.	Db Eb Ec	ib.	
Irian R.	Hf	ib.	
Iriqua M.	Gc	Irikwa	
Iroma R.	Cc	ib.	
Irribisinow V.	Gc		
Iruarkaruima M.	Da	Iwalkarima	Irwarkaruima ii 461
Irupuba R.	Gc		
Irutipu M.	Da	Ilutipu	
Iruwa R.	Db	ib.	
Ishitihanna R.	Bc		
Issano or Waiamo R,	Dc	Issano	
Itababo C. I.	Ed		
Itaballia C,	Cd	Itaballi (lower)	Itaballi in ii 781
Itabay V.	Fc		
Itabbo Amissi			See Amissi Itabo ii 1016
Itabou Hill			
Itabuiro R.	Dd	ib.	
Itafe C.	Ee		
Itahwah R.	Dc	Itawa	
Itaka (? R.)	Cd	Ithaca	

1875		1913	
Itakie C.	Dc	Itaki	
Itamine C.	Ed	ib.	
Itariebaru R. ...	Dd		
Iteribisce L, R. ...	Bd	Ituribisi R.	
Iteriti R	Bc		
Ituni R.	De	ib.	
Iturihorihoya I. ...	Cd		
Itury R.	De	Ituri	
Iwamabanna R. ...	Bc		
Iwiritawan R. ...	Gc		
Iwiwona R.	He	ib.	
Jackiquocki V. ...	Ec		
Juanimi M.	Fc		
Jumpy or Makilikakoro I.	De	Makilikoro	
Junco I.	Ab	ib.	
Ka-arimapo R. ...		Koirimap (Bd.)	ii. 800: in 1846 map.
Kabaiokitza M. ...	Hd	Kai-baio-kitza	ii 927
Kabuitipu M... ...	Da	Kapuitipu	Kapoitipu in text
Kaderbisi R.	De	ib.	
Kaiawaka M.... ...	Hd	ib.	
Kaieteur Great Fall . .	Dc	ib.	
Kai-irite M.	Gb	ib.	
Kaikutshi R.	Dd	Kaikushi-kabra	
Kaimari M.			In 1846 map: see Koimara
Kaitan V.			i 657. Carib V. on Cuyuni near Bartika Grove
Kaituma R.	Ac Bc	ib.	
Kaiwarkori R. ...	Ce		
Kaiyiwa Cliffs ...	De	? Epira Cliffs.	
Kakatiri I.			i 248
Kakwai, Peak of ...	Dc	Banakaru	
Kama Etin R. ...	De	ib.	
Kamaiba R.		Kamaiwawong V.	ii 462, 467. Br. of Kukenam
Kamwatta R.... ...	Bd	ib.	
Kanaima C.I. ...	Cb	ib. C.	
Kanaima R.	Cb	ib. Itabu	
Kaoo or Wai-icaripa I.	Cd	Kaow	
Kaphu ...			See Caphu
Kapoitipu ...			See Kabuitipu
Karakanang R. V. ...	Eb	ib. R.	
Karamang R. ...	Dc	Karanang	
Karamatahura C. ...	He	ib.	ii 937
Karawaimentow M. ...	Gd		Carawaimi in 1846 map and throughout text,
Karimang, Heights of ...	Dc	Karanang Hills	
Karnang R. ...	Eb	Karanang	
Kashawaicurru R. ...	Bc		
Kashwima M. ...	Dd		
Kaurutipu M. ...			See Cauratipu
Kenukawai M. ...	Hd	ib.	
Kerkanama R. ...	De		
Kesterbrake C. ...	Cd		
Kibilibiri R.	De	Kibiliberu	Br, of Wieronie

1875		1913	
Kibilibiri R,... ...	De	ib.	Br. of Berbice
Kiblerie Mission ...	Ce	Kibileri V.	
Kimbia R, ...	De	ib.	
Kimbia R. unnamed lake on	De	Abaribana L.	
Kimpia R	De		
Kinauriké M,	Da		
Kinotaima, M, ...	Ea		ii 502
Kirinampo			see Carinambo
Kiwakewaraba I. ...	Cd		
King William IV. C. ...	Fd Fe	ib	
Kissa Epping M, ...	Ec		
Koimara M, ...			a mistake for Kaimari
Kokoro or Maam I.	De		
Korokoropong C.	Cc		
Kororoni R.	Cd		the present Kuru-kuru R.
Kuaepulari I. ...			i 248
Kuamuta R, V, ...			ii 866, opening into the Itabbo close to its Moruca R, end.
Kuamuta V, R, ...			ii 800; branch of Kaarimapo R.
Kuiaraton V, ...	Gc		ii 105, 119.
Kuipaiti M, ...	Gc		ii 105, 119,
Kukenam R, M,	Da	Kukenaam, Kukenam (C.L.)	Wrongly spelt Kukeman M. in 1875 map,
Kukeritte-kute I. ...			i 248
Kuliserabo R. ...	Cd	ib.	
Kycabra R.... ...	Dd		
Kyk-over-all I. ...		Kyk-over-al (C.L)	i 654
Kyooa R.	De		
Kywaniero R, ...	Dd		
Labaria Point ...	Ab		
Labacabra R. ...	Dd		
Laicenoca R. ...	Cd		
Lalempo R.			ii, 882.
Laluni R.	Cd	Big and Little ib.	
Lamaha R, Canal ..	Cd		
Lamma R, ...	Cd	Lama	
Languana I, ...	Ee	Longuana	
Larima Cabara R. ...	Cd		
L ulau I.	C[illegible]	ib.	
Leguan I.	Cd	ib.	
Liddel's V.	De		
Lime I.	Cd		
Long I.	De	ib.	
Lookudya R.... ...	Dd		
Look up V, ...	Bd		
Loran I, Grande de ...	Ab	ib.	
Loran, Chico I ...	Ab	ib.	
Loo, The. V... ...	Cd	Loo Lands	
Lord Stanley's or Aritapu C	Fe	ib	
Lucky Spot V ...	Dd		
Luri R	Bc	ib	

1875		1913	
Maam or Kokoro I ...	De	Maam	
Mababo R	De	Wababo	
Mabunna R	Bc		
Mabura Hill	Dd	ib	
Macairito Channel ...	Aa		
Macapa M	Cb	Makapa	
Macariwari R ...	Ac		
Macareo Channel ...	Aa		
Macasseema V ...	Bd	Makasima	
Maccari M	Ed	Makari	
Maccarie C	De	Makari C.R.	
Mackunaima M ...	Eb		
Mc Lennan's I ...	De	ib	
Macouria or Boesel R ...	Cd	Makauria	
Macrebah C	Cb	Makreba	
Macudood R	Gc	Makudud	Flows into the Rupununi; not into the Purunaru R.
Macumuca R	Fc	Moco-Moco	Mucu-Mucu in ii 40, and in 1846 map.
Macupara R	Fc		Wrongly spelt Macupura.
Madewini R	Cd	ib	
Mahaica R	Cd Ce	ib R V	
Mahaicony R... ...	Ce	ib R V	
Mahaikabally R ...	Dd		
Mahaina R	Ac	Muhaina	
Mahiruni R	Ce	Maruni	
Mahu or Ireng R ...	Fc	ib	
Maiapi V	Cc		
Mai-hi C			ii 781
Maikangpati M ...	Fb		
Maikan Yepatori Rock ...	Fb		Maikang in ii 173
Maipure Rocks ...	Fc		
Maipuri R	De		
Mairari M	Eb		
Maishaba V	Bp		
Maiyari or Majari R ...	Fb		
Maiyari V	Ee		
Majari or Maiyari R ...	Fb		
Makaiku R			ii 822 and 1846 map. W. Bank Pomeroon, above the Sururu.
Makaparina M ...	Fc	Makaparima	
Makarapan M ...	Fd	ib	Makarana in ii 705
Makilikakoro or Jumpy I	De	Makilikoro	
Makui Makatona R ...	De		
Makunaima-auté Rock ...	Eb		
Makwa Koyo I ...	Cd		
Malawai R	Ee	Malawai	
Mamesna M			i 958, near Aripai R
Mamette M	Gc		
Mamoricura or Parrot I...	Cd		
Mampang M	Eb		
Manabadin R... ...	Dd	ib	
Manacaba R	Dd		
Manacaburi R ...	De	Manakaburi	
Manacca I	De		
Manacca R	De	Mambaka	
Manakara M	Fb		

1875		1913	
Manakobi R	De	ib	
Manapari M.	Ac	Manibari	
Manari R.	Fc	Manari-wau	
Manari V.	Bc	ib.	
Manaribisi R.	De	Manarabisi	
Manariparu R.	Cc		
Manatiwau R.	Gc		
Manawarina R.	Bd	Manawarin	Manwariny ii 859, 862
Manaweri M.	Ca		
Manaworan C.	Fd	Manarowa	
Manicurra R.	Bc	? Manikuru	
Manoa M.	Gc		
Manoshuballi M.	Fc		
Manwariny R.			See Manawarina
Mapare R. and Rocks	Fc	Maparri	Maipure in ii 673
Mapauri			ii 629, br. of Kukenam R: in 1846 map
Mappa I.	Dd	ib.	
Mapure M.	Fc	Mapuri	
Mapurie R.V.	Fc	Mapuro (C.L.)	
Maquiari R.	Gd	Makwiari	
Marabiacru Cliffs	Dc	Marabiakru	
Marabisi R.	Dc	Morabisi	
Maraetshiba M.	Fc		
Maraima M.			See Marima
Marakang R.	Eb		
Mara-mara R.	Cc	ib.	
Maraquia R.	De	Maramarabisi	
Marattacaba R.	Bc	Waratakaba	
Marawa Epping M.	Ec		
Marawaca M.			ii 459, Shewn in 1846 map
Marawar R.	Ca	Maruwawe	
Marbooro R.	Dd	Mabura	
Marebicuru R,	Ec	Maripakuru, Manpakuru	
Marehughi C,	Cc	Marehugi	
Marepa C.	Cd	Maripa	
Marepowta R, V,	Ed, Fc	ib, R.	
Mareppa Emba M.	Ea		
Mari C.	Cc	Mary	
Mari V.	Fc		
Mariamaru C,	Ea		
Maricabara R,	Ac		
Marico R,	Eb		
Marieparukeng R.	Ed	Mariparukeng	
Marieta L,	Aa		
Marieta Oboro I,	De	Parrot	
Marihi C	Cd	ib.	
Mariko R,	Be		Marico in 1846 map.
Marima M,	Db	? the westerly of the *two* Maringma Mts.	Wrongly spelt Maraima in 1875 map.
Marimari R,	Ab	ib.	
Marinaje R,	Cd		ii 294
Maripa C,	Cb		
Maripa M,	Eb	Murapa Yeng,	
Maripa Outé R,			ii 40. Takes its source on Western spur of Canuku Range.

1875		1913	
Maripa V.	Hc	ib.	
Maritamnia R.	Gd	ib.	
Mariusa Channel	Aa		
Mariwa R.	Dd	ib.	ii 781
Mariwaballi R.	Bc		
Mariwaru R.	Bc		
Mariwette or Taquiara M	Gc		
Marocco V.	De	Moroka	
Marooca R.	Bd	Moruka	Morocco ii 859, and throughout the text.
Maroodie R.	Cd	ib.	
Marop'a R.	Cd		
Marourona R	Hd	ib.	
Marshall C.	Cd	ib.	
Maruiwa or Whomana R.	Bc	Maruiwa	
Maruku M.	Fb		Maruki in ii 528 and 1846 map
Marupa R.	Cc	ib	
Maruwa or Parima R	Fb	Marua	
Masaetayourou Inlet	Fd	Masaetayourau	
Mashiveow R.	Fd	Mashive-au	
Massanapa R.	Dc	ib.	
Massepara R	De	Massiparu	
Massiwindui C. R.	Bc	Mazawini	
Massuro Creek			i 830
Mataparu R	Ec		
Matappi R.	Ee	ib.	
Matarooca M.	Ec	Mataruka	
Mataruki R.	Ha	ib.	
Matope C.	Cd	ib.	
Matuawotow V.	Gc		
Maturowow V.	Gd		
Matziendaua M.	Gc	Marchai-tain	
Matzipao C.	Gc	Mach-pawa	
Mauitzi or Mawitzi R.	Fb		
Maurucaru M. R.	Cb	Maurugaru	
Maurukiamu R.			ii 665, br of Rupununi
Mavaesi R.	Dd	Mowasi	
Mavisi M.	Eb		
Mawari Wonotobo or Gov. Sir James C. Smyth's C.	Ee	Wonotobo	
Mawarli R.	De		
Mawitzi or Mauitzi R.	Fb		Mawitzi in ii 329.
Mawunna Meketziba Hill	Gc		ii 707
Mawuwe-Kute I			i, 248
Maycar or Camaikariba R.	Gc		
Mazurine M	Cb		
Mazaruni R.	Cc Db Dc	ib.	
Mazuwini R. (lower)	Bc	? Mawukani	
Mazuwini R. (upper)	Bc	? Arawanta	
Mecrope Hill	Dd	Mekropai	
Mehokawaina R.	Bb	Whana	
Meketsiba M.	Gc		
Mekorerussa C.	Bb	Eclipse	
Meneruau R.			
Menese R.	Fc		

1875		1913	
Mepitiwow R.	Gc		
Merewari M.			ii 459. In 1846 map.
Merewaru R.	Fd	Meliwau	
Merewye R.	Db		
Meri R. M.	Aa	ib. R.	
Merume M. R. ...	Db	ib.	
Mihpai V.	Db	Maiapai	
Mibero R.	Cd		Mibiro ii 974
Mibicuri R.	Ce	ib.	
Minyona R.	He	ib.	
Mipah M.	Ed	ib.	
Mitarra R.	De	Matara V.	
Mocco-mocco I. ...	De		
Mocco-mocco R. ...	Dd	Moko-moko	
Mocha V.			ii 972
Moco-moco Point ...	Ac		
Mocorebong Peaks ...	Db		
Moleseno R	De	Moleson	
Mompena I.	De	Mapenna	
Mona C.	Dc	ib.	
Mona R.	Fb		
Monkey's Waist ...			see Osterbeeke Point
Monosse R.	Bc	ib	
Monticuri I.	Dd		
Mopay V.	Fc		
Mora R.	De	ib	br of Berbice
Mora R.	Fc	ib	br of Rupununi
Mora V.	Dd	ib	on the Demerara
Mora V.	Fc		on the Rupununi
Morababa	Dd		
Morabally R.	Cd	Moraballi	
Moraero	Fc		
Morakori R.	De		
Mora Passage... ...	Ac	ib	
Morai M.	Fb		
Moraquiaparu R ...	Bc	Durabanna	
Morebo R.	Bc	ib	Moribo, ii 875
Morewow R.	Fd	Morewau	
Moribo			see Morebo
Moroaquah R. ..	Db		
Morocco R.			see Marooca R.
Morocco Embarcation or Wai-ipukari ...	Fc	Yupukarri	
Morokai M.	Eb		
Morokima M	Cb	Morokina	
Moruca R	Fc		
Moshiba R	De		
Mosquito I	Aa	ib	
Mouranierocabra R ...	Dd		
Mowarieteur V ...	Ec		
Mowenow V.	Gd		
Mucu-Mucu R ...	Fc		br of Takutu : see Ma eu-muca
Mucu-Mucu, or Sehurini R.	Ac	Sehuruina	br of Barima.
Muipaina R	Ac		
Mukuripa M	Eb		
Muracaraicura R. ...	Ac Bc		

1875		1913	
Murapa Yeng	Eb		ii 363
Muratipu M,	Da	ib	
Murawa R.	Ed	Muruwa	
Murawai R. M.	Fb		
Murawar R.	Ca	Muruwawe	
Murayapong M.	Da		
Mureh-Mureh R.	Dc	Mure-Mure	
Murissicurru R.	Bc		
Muritaro			ii 1012
Muritipu M.	Eb		
Murray's C	Fd	ib	
Murre R.			ii 455,br of the Kukenam
Murura M.	Hd	ib	
Mururuina R.	Ac	Mururuma	
Muruwit M	Gc	ib	abandoned Carib Settlement.
Musara V,	Ed	Massara	
Musheparu R.	Fd	ib	
Muyang R,	Eb		
Nabba R.	Db	Naoba	
Naikuripa I,		? Makwai-baru	i 251. 656, opp. Bartica Grove.
Nakukai R,	Bb		
Nappi M. R,	Fc	ib, R,	
Nappi-Iperawaka V,	Fc		
Nassau, Cape	Bd		
Neckuwai R,	Bc		
Nembaru R	Db	ib	
Nerwa Saw Mill	Cd	Nerva	
New Amsterdam V,	Ce	ib	
New Daageraad V,	Ce	ib	
New River	Fe He	ib.	
Nickeri V.	De	Nickerie	
Nochpoko R.	Fd	ib.	
Noetkedacht V.	Cd		
Noytegedagt V.	De		
Nuima I.	Ab	Nuina	
Nunca Sarara	Eb		
Nunu or Cunihari R.	Ab		
Nuria M.	Ba		
Obian R,	De	Tobiana	
Obispos I.	Ab		
Ockuwa R.	Dc	Okuwa	
Ocuma R.	Dc	Okuma	
Oeni R.	Bd	Unu	
Ohina R.	Bc	ib.	
Oladipis R.	De	Holadibisi	
Old England V.	Dd		
Old Vigilante V.	De	Old Vigilantie	
Olupikai C.I.	Cc	Popekai, Topekai I.	
Omadekeur M.	Gd		
Ombarra R.	Cc	ib.	
Omughou M.	Ed		

1875		1913	
Onono or Onoro R. ...	Hd		Onoro in ii 925
Ooboodicooru R. ...	De		
Opoima M.	Da	Apauraitipu	
Oreala Cliffs	De	Orealla	
Oreala or Aureara R. ...	De	Orealla	
Orindouie Falls ...	Eb	Orindouk	
Orinedouk Fall ...	Eb	ib.	
Orinoco, Gt. Mouth of, or Boca de Navios ...	Ab	ib.	
Oritaja R.	Cd		
Oropatoun C.	Cc		
Orocabo V.	Cd		
Ororopi R.	Fb		
Ororu Malalli or Great Fall	Dd	ib.	
Orotoko or Curutoka R...	Ed	Kuratoka	
Ortuhar R.	Ed		Ortuahar ii 772
Oruba R.	Cd		
Orurucobra R.V. ...	Dd		
Ositiqah V.	Cc		
Ossotshuni M.R. ...	Gc	Ossotshini	Ossotschuni in text, and 1846 map.
Osterbecke Point ...		ib (Cd)	As Monkey's Waist in i 702: not in 1846 or 1875 map.
Otonain Rock... ...	Gc		
Otomong M.R. ...	Cb	Otomung R.	
Otucamabo R... ...	Ac	Tokomamo	
Oumaia Hills	Dd	Omai Mine	
Oumaia R.	Dd	Omai	Cataracts, ii 781
Ouropocari C.I.M. ...	Ed	Kurupukarri C.	
Our Village	Ea		
Ousayway Rocks, Rapids	Dc	Kusawe (C.L.) Kusowe	
Oweang R.	Db	ib.	
Owenaona R.	Cd	Oweanna	
Owenteik V.	Ec	(ib) Wandaik	
Pa M.			See Pa Epping
Paca-paca C.	Dc	Paku-poko R.	
Pacaraima M.... ...	Db	Pakaraima	
Pacasaro R.	Cd	Pakasaru	
Paccu C.	Cc		
Packaranga M. ...	Eb		
Pacutout Portage ...	Dc	Pakatuk	
Pacuwuina R... ...	Ee	Pakuima	
Padra V.	Bc		
Pa Epping	Ea		
Paintecobra V. ...	Dd	Paintekobra	
Pairawa I.	Cd		
Pairawa R.	Bc	ib.	
Paiwiyau R.	Gc	Pinniyet-wau	Paiwu-yau in ii 202
Paiwori Cayra C. ...	Dd	Paiwori Kaira	
Pakarampu M. ...	Ca	Pakarampa	Pakarampo in ii 645, 649.
Pakarawari M. ...	Eb		ii 386
Pakari R.	Ac		
Pakirona R.	He	ib.	
Pakuku Rock... ...	Hd	Pakaku	

1875		1913	
Palemon V.	Dd		
Paloureouta V.	Ec		
Panamoo R.	Db	Panamu	
Panatsikameru C.	Eb		Panatsikameri in ii 349.
Pantama V.	Db		
Papagos or Pilot I.	Ab		
Para R.			ii 862 br of Upper Moruka R. Esseq. Coast.
Paragua C.I.	Ca	Ankoko I.	
Parakua M.	Fb		
Paranyepu R.	Fc		
Parapaecra M.	Dd		
Parapimoi R.V.			I 665 in 1846 map.
Parapu R.	Bc		
Paraqua R.	Bc		
Paraquah C.	Dc		
Pararapu M.	Cc		
Parazawi C.	Gc		Paratawai ii 704
Parépiapa M.	Fc		
Parerabatonwow V.	Gc		
Parewara R.	Cc	Poreware, ib (C.L).	
Parika R.	Cd	ib and Channel	
Parima L.			See Amucu
Parima R.	Fa Fb Gb Ha	Parima vel Uraricuera; vel Rio Branco	
Parima Ranges			ii 289. In 1846 map.
Paripe R.	Dd	Paripi V.	
Paripi Hill, R.	De	ib. V.R.	
Paripu V.			i 665 near Caruawa R.
Parowacassie C.	Dc	Parawakas	
Parrot or Corua Oboro I.	De	Robertson	
Parrot or Mamoricura I.	Cd		
Parrot Point	Cd		
Partang R.	Db	ib.	
Paruacabara R.	Dd	Paraweka	
Paruauka Portage	Gc	Bara-bouk	Paruauku, ii 706
Paruima R.	Da	ib.	
Parumallali C.	Cd	Epiru marali	
Parumatalli C.	Cd		
Parura R.	De	Piruku	
Parutang V.	Ca		
Pasimang M.	Fc		i 953
Pataghe M.	Eb		
Patamong V.C.	Dc	Patamona ib.	
Patapatima I.	Cd		Patta-pateima in i 251.
Patawalla R.	De	Patwalla	
Patighetiku M.	Gc		
Patpanaro I.	Cd		
Patta-pateima I.			See Patapatima I.
Pauisette M.	Gc		
Pauitipu M.	Da	ib.	
Paumbo I.	Fd	ib.	
Pavian Hole or San Kuku Pt.	Ed	Santuk Pt	
Pawai-irang M.	Eb		

1875		1913	
Payuca C.	Cc	Paiyuka	
Peaimah C.	Cb	Peaima	
Peereboom V.	De		
Peepee R.	Eb	Pi-pi	
Pegua R.			i 515
Pelibelimba R.	Bc	ib.	
Penal Settlement	Cd	ib.	
Peropo V.	Ed	ib.	
Perparu R.	Ec	ib.	
Piacoa M.R.	Aa		
Piake I.R.	Cb	Kwiakwa	
Piamah, Falls of	Cb		
Piatzang Rock	Eb		
Pilot or Papagos I.	Ab		
Pinighette M.	Gc	Pinniyet	Pinghette in ii Ch. 3.
Pinniyettinow V.	Gc	Pinniyet-wau R.	
Pipicho V.	Fc		
Pirara R.	Fc	Pira, Pirara (C.L.)	
Pirara V.	Fc	ib.	
Pirisana V.			ii 882 on Barama about ½ mile below Cariacu V
Piritate M.	Gc	ib.	
Piritiku M.	Hd	ib.	
Piriwai M.C.	Fb		
Piriyauwa M.	Gc		
Pirocaima M.	Eb		
Piroto R.	Ac	Birote	
Pishani C.	Ed	Pisham-Pisham	
Piwerritaio R.	Ce		
Playa Point	Ac	ib.	
Poaghepping M.	Eb		
Pobawaow R.	Fd	Pobawau	
Poikeur R.	Dc		
Poinka-marca or Womu-ipong C.	Cc	Devil's Hole	Wrongly Spelt Pomkainarea in 1875 map.
Poinka-watu M.	Ca		
Point Playa	Ac	ib.	
Point Rightabout	Fe	ib.	
Poloma I.	Aa	ib.	
Pomeroon R.	Bd	ib.	
Pomkainarea Portage			See Poinka-marca
Pong R.	Db	ib.	
Pongabi V.	Dd		
Poobo V.R. Rock	Dd	Pubu V.R.	
Poropo C.	Cb		
Port Mourant Fresh Water Path	Ce	Port Mourant	
Portuguese I.	Aa		
Post Arinda	Ed,	ib.	
Post Seba	Dd	Seba	
Potaro R.	Dc	ib.	Black River on 1846 map
Poto R.	Fd	ib.	
Powis I.	De	ib.	
Powis or Woka M.	Cc	Oko	
Primo's Inlet	Fd	ib.	Primoss ii 720, 766
Primrose Hill V.	Cd		
Puenco I.	Ab		
Pukasanta V.	Fd		

1875		1913	
Punkuiba M.	Ca		
Puriari R.	Cc	ib.	
Puruna R.	Cc		
Purunaru R.	Gc	Kunaruwau	
Puruni R.	Cc	ib.	
Purura M.	Eb		
Puruwé R.	Ac		
Putiparu M.	Ea		
Pyuca C.	Cc	Payuka	
Quaima R.	a		
Quakabaka L.	Bd		
Quariwaka M	Fc		i 941, ii 40
Quarquia V.	Ec		
Quartata V.			Mistake for Quatata
Quashimi C.	Cc		
Quasinanucali R.	Fd		
Quatata R.V.	Fc	ib, Kwatata (C, L)	
Quatte-banaba I.			i 248
Quaye R.	Fc	Kwayé	
Querriman I.	De	Queriman	
Quiripui R.	Cb		
Quitaro or Guidaru R.	Fd Gd	Kwitaro	
Quivekuru R.	Cc		
Quonga V.	Ec		
Rabbit I.	De		
Rabbo Amissi			Mistake for Itabbo Amissi
Raleigh's Peak	Dc	ib.	
Raleigh's C., Sir Walter	Gf	ib.	
Rappu or Bamboo C, R.	Ed	ib.	
Red Cliff	Ge	ib.	
Red Hill	De	ib.	
Remolinos I.	Aa		
Rerekru R.	Fd		
Rewa or Roiwa R.	Fd	Illiwa (Rewa)	
Rhati M.	Gc	Raad	
Rhawow R.	Gc	Rua-wau	
Richmond Lock	Bd		
Rico Channel	Aa		
Rocky M.	Bb	ib.	
Roncho Vieja I.	Ab		
Roraima M.	Db	ib.	
Rué Imeru C.R.	Ea		
Rumit M.	Gc	ib.	
Rumutokoke V.	Fc		
Rupa R.	Cc	ib.	
Rupununi R.	Fc Fd Gc	ib.	See Camoyepaugh, ii 708
Ruru-Ruru C.			ii 699
Sa-acko I.	Ee	Wanuto	
Sabaina R.	Bc	ib.	
Sabaneta P.	Ab		

1875		1913.	
Sabernawow R.V.	Gc	Sabernawau	
Sabritin R.	Bc		
Sacaouta R.V.	Eb		
Sacarawa M.	Cc		
Sacarura Point	Cd		i 702
Sacupana Channel	Aa	ib.	
Sacupana V.	Aa		
Sacupana Vieja I.	Aa		
Saeraeri M.	Fb	ib.	
Saeraeri M.	Gc	Shiriri	
Saganang R.	Cb	ib.	
Salieng M.	Dc	ib.	
Samaria R.	Fc		
San Antonio M.	Ba		
Sanders V.	De		
Sandhills			ii 977
Sangoromung V.	Cc		
Sankuku Pt. or Pavian Hole	Ed	Santuk P.	
Sanmonawong R.	Db		
Sans-souci V.	Cd		
Santa Catalina V.	Aa		
Santa Rosa V.	Bd	ib.	
Sarabaro R.	Dd	Sabaro, Sarabaro (C.L)	
Sarabibo R.	De		
Saranieparu R.	Ec		
Sarata C.	Gc	ib.	
Saraurayeng M.	Ea		
Sarenapo R.	De	Sowaranap	
Sari R.	De	ib.	
Sassara C	Cd		
Savannah M.	Eb		
Sawako-tunalli M.	Fc		i 826
Sawara-auru	Fc Gc	Sauriwau	Sawara-auuru, ii 60.
Sawkins I.	Fd	ib.	
Saxacali Point	Cd	Saxakalli	
Saxically Rock			i.251; See Saxacali P.
Saya Great Fall	Dd	ib.	
Scabunk or Cativau-uru R.	Gc	Skabunk.	
Seba Post	Dd	Seba	
Sebay R.	Dd		
Sehurini or Mucu-Mucu R.	Ac	Sehuruina	
Semang R.	Dc	ib.	
Semire R.	Ce		
Sepumaka R.	Ac		
Seregatava C.	Cd		
Seroun R.	Cb	ib.	
Sericoeng C.	Cb	Serikoeng or Klintiuma	
Serribarra Hill	Dd		
Shaririwona R.	He	Shiririwono, ib. (C.L)	
Shea M.R.V.	Gd	ib.	
Shetukeng R.	Dc	(?) Kwitaru	
Shimkuna R.	Ac		
Shiruru R.	Bd	Issororo	Sururu, i 949, ii 821. 850 and 1846 map.

1875		1913	
Sick R.	Dc	Siki	
Simiri M.	Cc	Simeri Rapids	
Simoni R.	Fc	ib.	
Simon's Town V.	Dd		
Simuita V.	Bc		
Simuri R.	Dd		
Siparieparu R.	Ed	Sipariparu	
Siparimer C.	Cb	ib. or Akawahaima	
Sipari-wuini R.	Gf	Kamani	
Siparuni R.	Ec	ib.	
Siparuta Cliffs	De	ib.	
Sipu or Essequibo or Coatyang Kityu R.	Hd	ib.	
Sirikuanta Rock	Fb		
Siroppa M.R.	Ed	ib.	
Sisters, The. I.	De	Three Sisters I	Three Sisters in i 251
Smith's I.	Dd	ib.	
Smyth's R.	Fd	ib.	
Snake or Buonaparte I.	De		
Socoroco L.R.	Aa		
Somena R.	Fc	ib.	
Sororieng Peak M.V.	Dc	Soraricng, ib (C.L)	
Sowarti V.	Db	ib.	
Stampers I.	Cd		
Stanley's Town			ii 969
Stenaparu R.	Db	ib.	
Sudamong R.	Cc		
Simiri	De		
Sun or Camu R.	He	ib.	
Supenaam R.	Cd	ib.	
Suquabie R.	Db	Sukabi	
Sura R.	Ac		
Suracabra R.	Dd		
Surama R.V.	Ed		
Suribanna	Dd		
Suriby R.	Bd	[Siriki. Dutchman's Creek]	i 638 East bank Pomeroon Soebyrie in Bouchenroeder's map
Surinama R.	Bb	ib.	
Sururu R.			See Shiruru R.
Suwara-auru R.	Gc	Sauriwau	
Suwaraima I.	Cc	Swarima	
Swarte Hock or Birmingham P.	Cd	ib.	
Tabaitiku M.	Ge		
Tabinetta C.	Cd	Taminoda, Taminada (C.L)	
Tacaraerunone V.	Eb		
Tacocoma R.	De		
Tacuba R.	De		
Taiepong V.	Ec	Taipong Savannah	
Takie R.	Dc	Taki	
Takine C.	Cb		
Takutu R.	Fb Hc	ib.	br of Rio Branco
Takutu R.	Bc	ib	,, ,, Barama

1875		1913	
Takutu R.	Ec	Tipuru	br. of Siparuni
Takutuwow R.	Hc		
Tamalewona	He	ib.	
Tamannakiu M.	Gd	Tamannaiku, Tamanakiu (C.L)	
Tamanua M.	Bc		
Tambicabo Inlet	Ed	ib.	Tambicabo Island in ii 771
Tamboro M.	Gc	ib.	Tambaro in ii 732 and in 1846 map.
Tamour R.	Dd	ib.	
Tamungkang M.	Eb		
Tani R.	Hd	ib.	
Tapacoo C.	Cc	Tupeku	
Tapacooma L.	Bd	Tapakuma	Tapacuma in i 647 and in 1846 map
Tapiraperu M.			ii 459.
Tapori M.	Cc		
Tapuru M.	Cb		
Taquiara or Mariwette M.	Gc		
Taquiari or Cumuti M.	Ed	Takwari, Kumuti	
Taracai M.	Ed		
Tarakuri R.	De	Tarakuli	
Taramtibawau R.	Gc		
Taraqua			i 795 : the Rewa or Quitaro of the map.
Taraqua Inlet	Fd	Tarawaikwa	
Tarawa R.V.	Ec		
Tarenni M.	Ea		
Taripiru M.	Ea		
Tarpe C.	Cd	Tarpi	
Tarramu R.V.	Ec	ib.	
Tarucupani M	Gc	Darukabau	ii 699 Tarucuparu ii 707 Tarucaparu
Tatat M.			
Tauraculi R.	De	Taurakuli	
Tawailing M.	Ec	ib.	
Tawaiwow R.	Gc	Tawaiwau	
Tawampeh M.	Ca		
Tawi-Ikwia R.	Cb		
Teboco C.	Dc	Tiboku	
Tebocu, Heights of	Dc		
Tekere R.	Eb		
Temehri Rock	Ee	Timehri R. I.	
Temoreng R.	Cc	ib.	
Tenabo R.	Bc	Tenapu	
Tenambo R.	Ee	ib.	
Tenbou R.	Cd	Tenabo	
Tenemaru R.	Gd	ib.	
Tenette M.V.	Gc		
Terchilewan V.	Eb		
Terimbona V.	Bc	Turubang R.	
Terpima R.	Db		
Terpong R.	Db	ib-	
Thirabuli R.	Ab		
Tiger Hills	Dd	ib.	
Tiger I.	Bd	ib.	
Tiger R.	De	Kassi	br of Corentyne

1875		1913	
Tiger R.	Cd	ib.	br. of Essequibo
Timiteparu R... ..	Dd		
Timiti R.	Cd		br of Hawcrorini
Timiti R.			ii 885; Small Stream on east bank of Waini
Tipuri R. and Inlet ...	Dd	ib.	
Tivarune C.	Cd	Tuwarong	
Tiviruau R.	Gc	Tivituau	
Toboyeekyuru R. ..	Bc	? Atobobura	
Tocupo R, ...	Ba	ib.	
Tokoropatti V.I. ...	Cc	Tokor-opati	i 667 Tokoro or Tokorupatti
Tokutu or Aruan Inlet...	Ed	Takutu Pond.	
Tomatai R.V.... ...	Ee	ib.	
Tomorab R.	Cc		
Tonoma C.	Cc	Tinamu	
Toobaboromé M. ...	Eb		
Toobakeng M... ...	Eb		
Toonacoro R.	Cb	Tunakoro	
Tooyeku R.	Bc		
Toro Channel... ...	Aa	ib. Creek	
Torong V.	Eb		Torong Yauwise in 1846 map, ii 348 etc.
Toroparu R.M. ...	Cc	ib.	br of Cuyuni
Toroparu R.	Bc	Turubaru	,, ,, Barima
Tortoia I.	Aa		
Totohwow R.	Gd	Totowau	Dohte R. in 1846 map and ii 909
Totowau R.	Gc		
Toumone Basalt Rock ...	Fd		
Towcoanie C.	Dc		
Trekutara-tepau C. ...			ii 699
Tremitre			ii 699
Triviratighu M. ...	Gc		
Tropocari C.			i 566
Trouili I., Great ...	Cd	Great Troolie	
Tshibai R.	Bc	Sebai	
Tshimapuna C. ...	Cb		
Tshuma M.	Gc	Shuna	
Tuanu R.	Eb		
Tuanu Sararu C. ...	Eb		
Tuarutu M.V... ...	Gc	ib.	
Tuckparu V.	Bc		
Tukeit Landing ...	Dc	ib Fall.	
Tumatapari C. ...	Dd	Tumatumari	
Tumeng C.R.	Cb	ib. R.	
Tumong R.	Ec	ib.	
Tumuremo V.	Ba		
Tupuri R.	Ec	Tipuru	
Tupuring R.	Eb		
Tupuru R.	Cc	ib.	br of Mazaruni
Tupuru R.	Ec		br of Siparuni
Tupurukena R. ...	Cc		
Turabano R.	Cd	? Seweyo	
Turantsink R... ...	Fc	ib.	
Turerucata-kurin R. ...			ii 151 : in 1846 map
Turesie C.	Dc	Turesi	
Turtle or Cassi R. ...	De	Tiger	

1875		1913	
Turu M.	Fc		
Turubongeng R.	Cc		
Turuwiparu R.	Dd		
Tusa R.	Ab		
Tusaling R.	Ec	Tusenen	
Tussanu R.	Fd		
Tuwaballi I.	Ee	ib.	
Twasinki C.	Dd	ib.	
Twasinki M.	Dd Ed	ib.	
Tziau R.	Ca	Tshuau	
Uassari M.	Hc	Wassari	Wrongly Spelt Ussai
Ucaraima M.	Ea		Wrongly Spelt Ucariama
Ugene Channel	Aa		
Umata V.	Fc		
Una Barooca R.	Cd	Unabaruka	
Unamara R.	Fc	Wanamaru	
Union V.	Cf		
Uorora R.	Fc	Yurora	
Upara-Kuiba C.	He	ib.	
Urabbo R.	Dd	Yuraba	
Uradya R	Cd		
Uralli R.	Fc		
Urana R.	Hd	ib.	
Uraricapara R.			ii 530
Uraricuera, Urariquera R.			See Parima R.
Urieparu R.	Ec		
Urora R.	He	ib.	
Uropocari C.	Bb		
Urua (Old Mission)	Fc	Urua R	See Curua
Urumaroppa R.	Da	Urumamopa	
Uruturukeng R.	Ed	ib.	
Uruwai M.	Gc	ib.	
Ussai M.	Hc		A mistake for Uassari
Uwahparaduie R.	Eb		
Uwiya C.	He		
Vakiparu R.	Bc	Wakaparu	
Venturu L.			ii 6 : in 1846 map
Victoria Point	Ab		
Vindaua or Wintower M.	Hc	Win-tawa	
Viriette M.	Gc		
Viritow M.	Gc	Viritau	Apparently intended for Vivi
Virua or Virura R.	Fc	Virua	ii 298 : the Manucuropa of the older maps.
Vivi M.			ii 640, 703, and 1846 map See Viritow M.
Waburicabra R.	Dd		
Waburina R.	Bc	ib.	
Waca-Pau R.			i 635. See Wakapau

1875		1913	
Wackupano M.			Mistake for Wackupang ii 298
Wacuta Hills			i 638 west bank Pomeroon
Wadaris R.			Shewn in Bouchenroeder's map.
Waetipu M.	Db	Weitipu	
Wahmarra M.	Dd	Wamara	
Wahmatta V.	Cc		
Wahpanna V.	Bc	Kwabanna R.	
Wahparu R.	Db	Waparu	
Wahtope M.	Cb	ib.	
Wahuma			See Wapuna
Waiakapiapa M.	Da	Waika-piapu Waiaka piapu(C.L)	Wayakapiapa ii 461
Waicurie R.	Cc	Waikuri	cf Waikure M.
Wai-ica-cari Passage	Ab	Waika-kari ib.	or Cano Bassama
Wai-icaripa I.	Cd	Kaow	or Kaoo I.
Wai-ipukari	Fc	Yupukarri	or Morocco Embarcation
Waiking Epping M.	Fb	ib.	Between junction of Zuruma and Cotinga
Waiking Epping M.	Fb	(marked, but not named)	In fork between Cotinga and Takutu
Waikueh R.	Eb		
Waikure M.	Cc	Waikuri	cf Waicurie R,
Wailahparu R.	Db		
Wailahrima R.	Db		
Wailangteur R.	Eb	Wailang	
Waina R.	Bc		
Waine R	Ac		
Waini or Guainia R.	Ac	Waini	
Waini R.	Bc	Arawapai	In 1913 map the Arawapai is considered the Terminal of the Waini: what was previously the Waini head is now the Arawapai
Wainibisi R.	Dd	ib.	
Waipah V.	Eb		
Waipahyaracapu V.	Db		
Waipopekui	Cd	Popikai	
Waipopo R.	Gc	ib.	
Wairing R.	Ea		
Waitaru R.	Bc		
Waiteur C.	Dc	ib.	
Waiwa R.	Bc	ib.	
Waiworamuco R.	Bc		
Waka C.	Cc		
Wakapau R.	Bd	ib.	
Wakenaam I.	Cd	ib.	
Wakeromo R.	De		
Wakupang M.C.	Cc	Wakupang	or Acuiwaugh C. ii 110
Wakuroite M.			
Wall Cape	Cd		
Wamamuri R.	Dc	Wamamur	
Wamapatti R.	Cc		
Wamarru Serrika C.	He	ib.	
Wamekuha R.	Ed		
Wammari-kuiba C.	He	ib.	

1875		1913	
Wanakai R.	Ac		
Wanakara M	Fb		
Wanama R	Bb	Whanam -paru	
Wanamiaua R.	Dd	Wanamiawa	
Wanamuh or Yau-uh R.	Hf	ib.	Wanamu, ii 927.
Wanguwai or Camoa R.	Hd	Kamoa	
Wanguwai and Amneu Ranges			ii, 151
Wannoka R.	Dd	Wanaka, Wanoka(C.L)	
Wantuana C.	Db	ib.	
Wapau R.	Bc		
Wapuau R.	Hd	ib.	
Wapuna M.	Hc	ib.	ii 743: Wapuna or Wahuma in ii 150.
Warabarachitu V.	Fc		
Waracaba R.	Ab		
Waracabara R.	Bd	Wainibaruka	
Warack R.	Dc	Wara	
Waracooma V.	Ec		
Waralli M.	Fc		
Waramai R.	Bc		
Waramatipu M.	Ea		Wrongly spelt Waramatipo
Waramatipu M.	Eb		
Warami M.R.	Fb		
Waranaki M.	Ea		Waranak in ii 495, 496. and 1846 map,
Waranasso I.	De		
Warappa R.	Dc	Warapa	
Waraputa V.	Dd	ib. Falls	Abandoned site of mission or Curatokoa
Warara-aburupng C.	Cc		
Warara-sararu C.	Fb		
Wararite R.	Ea		
Waratilla R.	Cd	ib.	Waritilla in ii 974
Waratti Hill	Gc		
Warawaipai R.	Dc	ib.	
Warayo R.	De		
Warerie R.	Dc	Wareri	
Warimambo C.	Cd	ib.	
Warimatipu M.	Da	Warinatipu	
Warimiapu R.	De	Warniabo	
Warimiwau R.	Gc		
Warina R.V.	Bc		
Waripara R.	Cc	Waripari	
Waripuow V.	Gc		
Waritilla			See Waratilla
Wariweh M.	Gc		
Waroesi R.	Bd		
Warongong R.	Db	ib.	
Warramuri V.	Bd	Waramuri Mis.	
Warratu C.	Dc	Waratuk.	
Warrowarang R.	Db		
Warru V.	Bc		
Waru V.	Gc		
Warumatta V.	Db		
Warungkai R.	Eb		Warungkaiti in ii 508
Warungkaieng M.	Eb		on head of Warungkai R.
Warungkayeng M.	Eb		Between Waikueh and Cumparuyamou Rs.

1875		1913	
Warupina M.... ...	Cc	ib.	
Waruwau or Awarra R.	Gc	Awariwau	
Wasaruapeur R. ...	Db		
Wasseouru R... ...	Bc		
Wassiaku I.	De		
Wassiapo R.	De	Wassiabo	
Wassicuru R.... ...	Ab Ac	ib.	
Watama R.	Fd		
Watamung M... ...	Ed	ib.	
Watawarai L.... ...	Fc		
Watawau or Watuwau R.	Gc Hc	Watu-wau	
Waterbaru M... ...	Cb	ib.	
Waterticow M.V. ...	Gd	Watuticaba	or Watuticaba
Watuka R.	Cd Dd	Mahaicony Watuka	
Watuticaba M.V. ...	Gd	ib.	or Watertikow
Watuwau or Watawau R.	Gc Hc	ib.	
Watyau R.	He		
Wause M.	Ac	ib.	
Wau-uno R.	Ac	Wano	
Wawacunaba M ...	Gc	Wawakunaba	
Wawat M.	Gc		
Wayaka-piapa M. ...			See Waiaka-piapa
Wayanock R.	Eb		
Wayarimpo R. ...	Cc	Waiarimpo	
Wayaruima I	Bc		
Wayatsipu M	Db	Wei-assipu	Wayas-tipu in 1846 map,
Wayawatiku M. ...	Gc	ib.	
Wayuma R.	Bc	Waiuma	
Weuamu R.	Ca	ib.	
Wenipero R.	Dd	Big Wineperu	S. of following br of same name
Wenipero R.	Dd	Little Wineperu	N. of previous one.
Wenkobat	Ed	Inkapati	
Werri-Werri R. ...	Cd	Weri-werai-kuru	
West P.	Ab		
Wetteverden M. ...	Dd		
Weynamou R... ...	Cb	Méamu	
White or Ainiutong M ...	Eb		
Whomana or Maruiwa R.	Bc		
Whycarapie R. ...	Bc	Waikerebi	
Wibra R.	Bc	(?) Waiwa	
Wicki R.	De	Wikki	
Wieroni R.	De	Wiruni	
Wieronie R.	Dd	Wiruni	
Wilambaru R.	Db		
Windsor Forest V. ...	De		
Winipiru R.	Cd	Wineperu	
Wintower or Vindaua M.	Hc	Win-tawa	
Wirina R.	Eb		
Witzapai R.	Gc	Wichahai	Witzapi on 1875 map,
Woka or Powis M.K. ...	Cc	Oko	
Wokomung M. ...	Ec	ib.	
Womuipong Portage ...	Cc	ib.	or Pomkainarea, which see

1875		1913	
Woodlands V	Cd		
Woosowter C	Db	Wusowter	
Worms I.	Cd		
Worokoi Maiari C.	Fb		
Woroong R.	Db	Worung	
Wotototobo C	Ee		or Sir J. Barrow's C.
Woupu R.	Ac		
Wuiri R.	Bc	Huri	
Wurucokua M,	Ec	Weitipu	
Wyoclaypalouta V.	Db	Waioklepaluta	
Yackariwa C.	Ce		
Yackariwuiburi M	Fc		i 953
Yackitiru R.	Ac		
Yaesi Cayra C	Dd	Yesi	
Yahobiha R	De		
Yakarimi Rocks.	Hd	Yakirimi ib.	
Yakiri R.	Bc		
Yakoka R.	Ce		
Yakontipu M	Db	Maringma,* ib (C.L.)	
Yamanock R.	Db	Yamanok	
Yamari R.	Dc	Vamari	
Yamemure C,	Cb	Amamuri V.	
Yanekuru R.	Cc		
Yaninzaec C.	Dc		
Yapamany R.	Cd		
Yaramuku R.	Be	Yaramba	
Yaraparo R.	Dd		
Yarappa R.	De		
Yaraucaburi R.	De		
Yarewah V.	Fc		
Yarikita R.	Ac Bc	ib.	
Yaringia M.			Mistake for Yaringra
Yaringra M.	Eb		ii 363, and map to frontispiece vol i.
Yarira R	Dd		
Yaroai R	Fc		
Yaronglar M	Ed	ib.	
Yarouricabra R	Dd		
Yaruaramo			See Yaruaruima
Yaruaruima M,	Da	Eluwarima	Yaruaramo ii 461
Yaruni R	Cd		
Yauraboo R	Dd		
Yau-uh or Wanamuh R,	Hf	ib.	
Yawaira R.	Ea		ii 496
Yawangra V.			in 1846 map (Eb)
Yawarabisaro R	De	(?) Yakusari	
Yawari R.	Dd		
Yawaruima M.	Eb		
Yawracabra R.	Cd		
Yaya M.	Dd	ib.	
Yessiatado R.	Bc		
Yessicabra R.	Cd	Yesikabra	
Yiemah R.	Dc	Yaiema	
Yiwona R.	Hd	ib.	
Youcaboora R.	Dd	Yaukabura	

---

*Probably the easterly of the two Maringma Mts. charted in juxtaposition in 1913 map

1875		1913	
Youh's I, ...	Cd		
Youruar R	De		
Yrapa M	Ba	ib.	
Yuacari or Yuwacari R...	Dd	Yowakuri, Yawakuri (C,L)	
Yuawauri or Cassikityu R.	Hd	Kassikaityu	
Yucanopito C	Hd	ib.	
Yucawarin M,... ...	He	Yukawarin	Yucawaria, ii 934
Yucucara I.V. ...	Dd		
Yucuribi C.	Ed	Yukuriba	or Cumakatoto. Yucurit in ii 772
Yucurisi R	Dd	Yukurishi	
Yucurit I.	Dd		
Yukona R.	Hd	ib.	
Yupotte R.	Bc		
Yuricabara R... ...	Ac		
Yuruan M.	Gc		
Yuruan R, ...	Ca		
Yuruani R.	Da		
Yuruari R.	Ca		
Yurumé R.			ii 530.
Yuwacuri or Yuacari R...	Dd	Yowakuri, Yawakuri (C.L)	
Yuwana	Dd		
Zabang M.	Eb		ii 415
Zakaika R.	Da	Skaika	
Zapang M.	Cb		
Zarantipu M.	Da	Charang	Zarangtipu, ii 463
Zaura R.	Da		
Zemai M.	Fc		i 953
Zibi C.	Hf	ib.	
Zibingaatzacko M. ...	Hd	Zibingatzako	
Zicki M, ...	Eb		
Zuappi R.			ii 409, 415, a terminal br of Cuino R.
Zuaptipu M.	Ea		
Zunona R.			mistake for Zurona
Zurona R, ...	Eb		ii 343 and 1846 map: see Zunona
Zuruma or Zurung R, ...	Eb	ib.	

TRAVELS IN
BRITISH GUIANA

DURING THE YEARS 1840—1844.

Carried out under the Commission of
HIS MAJESTY THE KING OF PRUSSIA

BY

RICHARD SCHOMBURGK.

Together with a Fauna and Flora of Guiana according to the works of Johannes Müller, Ehrenberg, Erichson, Klotzsch, Troschel, Cabanis and others.

Including Illustrations and a Map of British Guiana
DRAWN UP BY
SIR ROBERT SCHOMBURGK.

VOLUME ONE.

LEIPZIG.
At the Publishing House of J. J. WEBER.
1847.

TO HIS MAJESTY

THE KING

FREDERICK WILLIAM IV.

IN DEEPEST REVERENCE AND GRATITUDE

Most Respectfully Dedicated

BY

THE AUTHOR.

PREFACE TO THE FIRST VOLUME.

While submitting herewith to the Public the results obtained during my stay in a part of South America so important from an ethnographical, zoological and botanical point of view, I feel myself forced, both for my own and the reader's sake, to preface them with a few words of introduction. Herein I would venture to mention most submissively not only the debt of gratitude, expressed with the greatest reverence, for the high honour whereby, through the support granted by His Majesty, Our Most Gracious King, that liberal-minded patron of the sciences, I was able to gratify the wish dearest to my heart that I had cherished from youth to maturity, but also to indicate the standpoint from which my book is to be reviewed, rather than to have it judged on an arbitrary basis.

The results obtained in almost all departments of the several branches of Natural Science in the course of the travels undertaken by my brother, Robert Schomburgk, under the direction of the Royal Geographical Society of London during the years 1835-1839, in a part of South America, which up to then was as good as unknown,—so far as concerned its geographical, ethnographical, botanical and zoological relationship with the whole of the rest of the Continent,—had attracted the attention of men of learning in the homeland. This was particularly the case with one whose name like a guiding star will lead the way in Science for all time, and through whose friendly consideration I was enabled with my slender resources, to add my contribution to the knowledge of the surface-structure of our planet, though only as a collector of material for the further study of the subject.

When my brother, entrusted with a fresh Commission by Her Majesty the Queen of England, returned to the field of his former labours, it was Alexander von Humboldt through whose means I received the assistance from Our Most Gracious Sovereign, that enabled me to accompany him to Guiana, and there, with its numerous treasures, for the most part still undescribed, do the best I could in the interests of our National Scientific Institute.

And although, conscious of my weakness, and in spite of the want of a scientific training, I have ventured to make my observations public, the necessary pluck was due to the encouragement and sacrificing support rendered me by men of learning, as I realise only too well the claims that Science makes on works of this kind, and that I am the last person to satisfy them. The fact is, that as a gardener I was not familiar with every essential scientific problem connected with the branches of Natural Knowledge foreign to my profession, and that whatever success I may have achieved was gained as the result of direct experience with Nature, the most stimulating of teachers, and of the earnest determination to understand and learn to grasp everything that she put in my way. The reader must take these observations into consideration when passing judgment on my feeble efforts.

I am deeply indebted to my brother, and owe it to him if my labours should prove to be successful. I have to thank him also for the most important portion of the work under discussion, the accompanying map, the wearisome labour of several years: he drew this under his Commission with the British Government, and when the latter left it for him to print, readily handed it over to me for publication.

No one realises better than myself that I have been far from reaching the goal proposed at the commencement of my journey, and that my earnest intentions have been only partially fulfilled. The judgment of the critics, who are not always impartial, entirely corresponds with my own personal dissatisfaction in this case, but the knowledge of having honestly striven towards my object through thick and thin is sufficient consolation for me.

Added to the simple description of what I noted and observed very carefully in the course of my journey is a feeble attempt at a Fauna and Flora of the Colony, in the compilation of which I have trusted my own judgment only after having had it confirmed by the mature experience of others. The inclusion of this material is entirely due to the energetic support of men who, with their courteous assistance and gentle but stimulating advice, have not only encouraged me in the attempt, but at the same time have unselfishly and readily supplied me with their own descriptions of the new forms met with in my zoological and botanical collections. I feel bound to express my thanks publicly and particularly to Dr. Klotzsch, Professors Johannes Müller, Ehrenberg, Erichson, Dr. Troschel, Mr. Cabanis and others, who have helped me so whole-heartedly in the undertaking.

And so, with the most graciously granted permission and the most respectful expression of thanks, I place my poor work not only at the foot of His Majesty's throne, but also hand it over to the consideration of the public in the trust that they will judge it by no other standard than that which is in correspondence with the position in life that I have followed in the past, and which I occupy at present.

RICHARD SCHOMBURGK.

CONTENTS OF VOLUME I.

Chapter I.

Page.

Departure from Voigstedt—Frankfort-on-the-Main—Rotterdam—Voyage to England—Arrival in London—The Docks—Natural History Institutions—The Niger Expedition—Personal Experiences .... 1— 7

Chapter II.

Departure from London—The Travelling Party—Captain Rothwell—Sea-sickness—Experiments with Sea-weed—Crossing the Line—The New World .... 8—16

Chapter III.

Landing—Georgetown—Historical Retrospect .... 17—79

Chapter IV.

Expedition to the mouth of the Orinoco—Mouth of the Waini — Sand-bank—Mora—Barima—Warrau — Cumaka village and its environs—Commencement of the rainy season—First trip to the virgin forest—Chigoes—Bête rouge—Mouth of the Barima and Orinoco—Return to Cumaka—Habits of the Sloth—Arawak chief Caberalli—River Aruka—Amacura—Religious Beliefs, Manners and Customs of the Warraus—Journey up the Barima—Flora and Fauna of the river basin—Akawai—First appearance of primitive rocks .... 80—163

Chapter V.

Splitting up of the Expedition—Return to the lower reaches of the Essequibo—Network of natural canals—River Whomana—Waini—Obstinacy of the Negroes—Barimani—Beara—Asacota settlement—Manners and Customs of the Arawaks—Court-day—Flora of the Barabara—River Morocco—Morocco Mission—Missionary Collins—Colonies of Ants—Mud-banks of the coast—Mouth of the Pomeroon—A district of abandoned estates—Hospital for lepers Mr. Brett's Mission—Tapacuma Lake—Wandering Ants 161—195

Chapter VI.

Mouth of the Essequibo—Islands at the mouth—Bartika Grove—Mouth of the Mazaruni—Kyk-over-all Island—Penal Set-

Page

tlement—Cuyuni—Carib Settlement Kai-tan—Old Dutch mining claims—Divine service at Bartika Grove—Arrival of my brother at the Mission—Results of his journey—Return to Georgetown—Fort Island—Yellow Fever—Plantation L'Heureuse Aventure—The Police Chase .... 196—223

Chapter VII.

Expedition to the Interior of Guiana—Departure from Georgetown—Ampa Station—Osterbecke Point—Commencement of the Rapids and Cataracts—Flora of the lower Essequibo region—Itaballi Cataract—Aharo—Laying season for Turtle—Gluck Island—Arissaro Mountains—Commencement of the second series of cataracts—Waraputa Mission—Hieroglyphics—Kanaima—Twasinki and Akaiwanna Ranges—Tambicabo Island—Ouropocari Cataract—Ackramucra—Rupununi—Carib Settlement—Kirahagh Aurime Savannah—Macusis—Victoria Regia—Haiowa, Macusi Village—Sudis gigas—Savannah fires—Wai-ipukari Inlet—Tapir Hunt—Awaricuru .... 224—299

Chapter VIII.

Arrival of the Military Expedition—Our departure for Pirara—Savannah Flora—Ant-hills—Canuku Range—Pacaraima Range—Pirara—Source of the river Pirara—Aberisto, the Brazilian—Mar de aguas blancas—Lake Amucu—Islas Ipomucena—Watershed of the Rupununi and Rio Branco—Flora and fauna of the neighbourhood of Pirara—Herds of wild cattle—Arrival of Friar Josè dos Santos Innocents and of Captain Leal—Señora Liberadiña—Badueca—Catching and killing wild cattle—Brazilian vaqueiros—Arrival of a party of Maiongkong Indians from the Orinoco—Re-erection of dilapidated houses at Pirara—Construction of Fort New Guinea .... 300—320

Chapter IX.

Excursion to the Canuku Range—Watershed between the Mahu and the Rupununi—Awarra Village—Virgin forest—Bed of the Quayè—River Nappi—Nappi Village—Burial ceremonies of the Macusis—Industry of the inhabitants of the Canuku Range—Weapons—Blowgun—Ascent of the Curassawaka—Chasmarhynchus carunculatus—Rupicola aurantia—Ascent of the Ilamikipang—Strychnos toxifera—Preparation of the Urari poison—Wassi poison—Return to Pirara—Habits of the Cathartes aura—Preparations for the journey to the sources of the Takutu .... 321—368

CHAPTER I.

Departure from Voigstedt—Frankfort-on-the-Main—Rotterdam—Voyage to England—Arrival in London—The Docks—Natural History Institutions—The Niger Expedition—Personal Experiences.

1. The peaceful Home with all its pleasant recollections of a happily spent Youth, with its many remembrances of nooks and crannies and the occasion of any event important to the childish mind, which follow us like faithful companions from early to old age, already lay behind us on the morning of 29th October, 1840. Farewell, a farewell perhaps for life, had been taken of my aged father, my brothers, sisters and friends. Alongside my brother and his Indian servant I rode in silence over the autumn-bare plains of golden pasture to a very stirring uncertain Future, while my heart, still bound by thousands upon thousands of ties tarried in the Past, and my soul sought to penetrate the Future in the hope of answering the anxious thought: "Will you ever see these folks of yours again, when, after long years of absence, you once more get as close to home as you are now?" But to what my heart could neither answer "Yea" nor "Nay," that what my spirit could not fathom, was solved by the faithful prophet of my own country, by the legend garlanded Kyffhäuser* now lighted up with the rays of the autumn sun. According to the oft-proven refrain:—

> If Emperor Redbeard takes off his hat,
> Fine weather to-morrow is presaged by that:
> Should he however now choose it to wear,
> To shun any journey, just take every care.

its friendly beaming aspect promised me a successful journey, and a home-coming when I should once again find all upon whom I had set my love.

2. However much we may smile in calmer moments at our clinging to such absolutely independent coincidences, they nevertheless, in times of dire distress, undoubtedly exercise over our whole personality a power which even the most forcible process of reasoning is unable to influence.

3. That faithful friend, the far-stretching meadow-land, soon passed out of sight, and the horses quickly trotted on towards Gottingen where my brother wanted to spend two days to make Professor Gauss's personal acquaintance and at the same time to familiarize himself at the Observatory with the procedure necessary for meteorological observations.

---

*Kyffhauser is a range of hills in Thuringia, Germany, with the ruined castles of Rothenburg and Kyffhausen.

> " Hat Kaiser Rothbart ab den Hut
> So wird auch morgen das Wetter gut
> Hat er ihn aber aufgethan
> So sollst du auch das Reisen lahn."

The Kyffhauser was a good omen to the intending traveller. If the brow of the height were clear, good weather could be expected on the morrow etc. Emperor Redbeard is Barbarossa who is supposed to be living in state here asleep and only waiting to be wakened. (Ed.)

4. We hurriedly made our way through the pleasant plains of Gottingen, of romantic Munden, and of Fulda, until, later in the evening we got to Cassel with its thickly-foliaged mountain-range and monuments falling to decay: we left again before daybreak, in order to push on to Frankfort. Envious night hid Marburg from our view, dusky morn enveloped Giessen in a mist: only Frankfort welcomed us in the bright morning sunshine, but my brother found Professor Rüppel away. After a short visit to Heinrich Meidinger (known by his work: "Travels through Great Britain and Ireland"), we hurried on at noon to the Railway Station with the object of reaching Mayence the same day. It was on this short stretch that our own journey, hardly commenced, might easily have come to an abrupt ending, because owing to the carelessness of the driver, the engine together with some carriages ran off the rails. A momentary shock fortunately proved the only result of an accident threatening such dire possibilities, and the waters of Father Rhine, as they rolled along in all their majesty, soon made us forget all about it. The moments that I spent absorbed in silent contemplation on the Rhine bridge at sunset will never be effaced from my memory, for although the stream has been landed thousands of times, all the poetic and prose descriptions still leave something to be described, and its praises can never be exhausted. I felt this forcibly, when on the following morning, as the steamer cleft its way through the bluish green waters, we passed the vine-covered mountains with their proud castles, the genial valleys and smiling villages, towns and cities, while the Rhinelanders returning home from taking the oath of allegiance in Berlin sang in joyous chorus the old "Am Rhein, am Rhein," until finally the number of our happy fellow-travellers decreased at almost every stage, and Dusseldorf, where we spent the night, lay before us in the distant plain.

5. The buildings that smiled at us strangers so pleasantly from the banks, together with their pretty little gardens surrounded by green fences and natty stone pavements in front of the dwellings,—in short, the reputed and distinctive cleanliness and tidiness of the Dutch villages with their red-shingled roofs, and their many weather-cocks on the ridge-tops, would have indicated clearly enough that we had crossed into Dutch territory even if the Customs Office had not already notified me of it. What I had imagined the interior of a Dutch household to be, judging from its outside, was completely confirmed when we arrived in the evening at Nymwegen and spent the night in one of the Hotels there. Rotterdam on the other hand has quite lost its outward semblance of a Dutch city, the reason for which may very well be that as an important port it cannot remain true to its national traits. Considerable rain, that continued all day still further added to the dirt in the narrow and angular alley-ways.

6. I was not a little astonished however when upon looking out of the window of our room I saw a number of enormous masts rising in the centre of the city above the pointed gables and lofty roofs. On going out, I noticed that all the wider streets were intersected by huge canals, in which the biggest merchantmen, lying here and there. at anchor, were either being loaded, or else had already taken up their win-

ter quarters. The immense number of vessels, from schooner to East Indiaman, naturally claimed my entire interest because these were the first large sea-going vessels I had ever seen.

7. On the following morning we boarded the big steamer "Giraffe" that was to take us to the capital of the civilized world. Our travelling companions were but few; but hardly had the land disappeared from view than that ghastly bug-bear, sea-sickness, entered our circle and drove one of us after the other from deck to saloon. This few hours' foretaste proved quite sufficient to let me conclude what was waiting ahead for me. At four o'clock in the morning we reached the mouth of the Thames when the moaning and groaning of the pale-faced passengers gradually eased down.

8. Getting on deck, proud Albion, the sea-encircled isle, the emporium for the riches of all the world, had already taken me to her own, while the smoking chimneys, and beautifully constructed and animated banks acclaimed "Rule Britannia" from both their shores in self-conscious national pride. Sheerness with its strongly fortified Fort, and Chatham with its wharves and Royal Marine Arsenal already lay in the dim distance far behind, whereas ahead, there rose the little township of Gravesend, in the background of which a grey dark misty and smoky cloud indicated the site of the Giant City where already the fate of different portions of the world had so often been decided.

9. Immediately beyond Gravesend the environs of the Thames again became more uniform, the banks flat and swampy, even the sea wall seemed to be in bad condition. But as Woolwich came into view, this uniformity disappeared, and from out of the well-known Artillery park, the immense Arsenals, and wharves of the Royal Marine (Dockyards) there fell upon our ears an uproar, that found its echo in the confused din of innumerable steam-engines on the opposite shore. The heaped up stores in that field of wood and iron, the number of Dockyards and Timber-yards for building and repairing the largest ships of the line, the innumerable Saw and Planing mills, the multifarious hammering in the anchor-smith's and cannon foundry, all proclaimed loudly enough that England indeed sways her Sceptre of Sovereignty over all the seas.

10. The Dock-yards and Magazines were generally surrounded with immense walls, and all approaches seemed to be occupied by strong guards. Among the buildings that must strike every stranger the Military Academy which stands immediately behind the yards, and the Riding School, built in the style of a Grecian temple, with the Artillery Barracks attached, are particularly prominent, while to the westward rise the huge Barracks of the Marines.

11. But one did not really want to look for signs of hustle and bustle only on the still far distant shores, for around and close to the roaring steamer this had developed to so high a pitch that she was several times forced to reduce her speed. Boats, schooners, merchantmen, and steamers passing up and down stream, reduced the broad waters of the Thames that were slowly rolling down into the sea, to a narrow channel, and I gazed in wonderment at the strange picture that human industry and activity was unfolding until my eyes rested on a dismasted and unrigged colossus, the huge hull of one of those former ships of the line, that was now doing duty as a hulk for convicts for New Hol-

land. Just then those who were already sentenced to transportation were being taken ashore to work in the Royal Dock-yards.

12. My next surroundings also kept me busy, for Greenwich dipped out of the mass of delightful country houses, out of the dense enclosure of autumn-tinted gardens, above a regular forest of chimneys reaching the skies, while the world-famed mistress of the erstwhile dominant lode-stone, the Greenwich Observatory, rose on the thickly foliaged hill of Greenwich Park; the most beautiful building in England situate on the bank, the large Naval Hospital founded by William of Orange and opened in 1705, hid a portion of the comfortable-looking township.

13. Hardly had we got past this than Deptford, now almost within reach of the tentacles of London, spread itself out before us with its old ships, wharves and timber yards of the Royal Marine where once upon a time Peter the Great served his apprenticeship.

14. Every turn of the paddle-wheel of the easy-going engine bore me on to ever increasing hurry and scurry; a real forest of masts with the colours of all the trading nations of the world gaily floating in the morning breeze, indicated the presence of docks on both sides of the banks, from which a number of small boats were rowing up stream and down stream in all directions, some bringing passengers and goods from ship to shore while a number of others were conveying them in furious haste from shore to ship.

15. While contemplating this busy harbour life we arrived at the anchorage of the "Giraffe" which happened to be immediately opposite the Custom House, when our luggage was immediately taken possession of by its officers and brought into the building.

16. Closely intent upon the next minute when I was to make my entrance into the capital of the civilized world, the outside of which had already wrought such a powerful impression on me, I strode lightly at my brother's side towards our lodgings which, through the kindness of Mr. Shillingtaw, the Librarian of the Royal Geographical Society, had been engaged for us in Golden Square.

17. A detailed description of this immense area of houses with all its life and strife, its everlasting excitement, its racing and chasing after a goal, its bright and blinding lights, and still more dismal shadows, its palaces to which His Lordship who has been dining out and dining well, hies back in gorgeous equipage at night, and its dark and dirty streets along which enervated Vice sneaks like a wandering skeleton at break of day—in short, a description of London, the present-day City of the Seven Hills, lies beyond the scope of what I am attempting in this work.

18. Our departure from London was delayed longer than we had anticipated, owing to my brother finding his preparations being far from as advanced as he expected; this however afforded me an opportunity of getting to know the City better, both in its outer and inner bearings. The Tower and St. Paul's have been described long ago, Westminster Abbey has already secured more than one monograph, and every "Guide in and around London" contains sufficient information about Somerset House, Whitehall, the Admiralty, Horse Guards, Westminster Hall, and

fairy-like Regent Street. I accordingly pass them all by, but yet cannot refrain from lingering a moment on the establishments that proved of the greatest interest to me and bore most striking testimony to the wealth of English industry and trade,—the different docks and shipyards. After visiting St. Paul's, Westminster, in fact all the more remarkable buildings, and admiring the Parliament Houses now in course of erection, I turned my steps to the northern side of the Thames and showing at the entrance of St. Catherine's Docks the necessary pass with which I had been provided, was allowed to enter. In the huge warehouses, fire-proof vaults, and on the ground there lay heaps of our northern produce. When in the year 1823, the alteration in the hitherto bonded-warehouse system was introduced, several private individuals combined to form a joint stock company and erected these docks, thus taking the remedy into their own hands, as they could not submit to the high duties charged by the London Docks previous to actual sale.

19. From here I hurried on to London Docks in Wapping, commencing with the small ones, and ending with the larger. They were established in 1802, cover a floor-space of more than 20 acres which they enclose in a square, and are accordingly divided into South, West, North and East banks. Huge sluices lead to the compact Thames flowing past. Immense warehouse sheds, under which the packing of goods coming in can be remedied, and the merchandise piled up in rainy weather are drawn up around the banks. A paved carriage road, running at the back, divides them from the long row of fire-proof vaults of which the large tobacco one consists of four continuous floors one above the other. The cellars of this mighty warehouse might well be the most interesting and largest that Europe has to show, and were a stranger to venture in without a guide he would certainly have as little chance of finding the exit as Theseus did that of the Labyrinth,—unless he had tied the end of the guiding thread onto the entrance gate. These cellars can hold more than 100,000 casks of wine: the complicated pathways are generally lighted up. Each of the four banks has its especial number, every number its own head-office with its officers, inspectors and cellar-men who again are collectively subject to a Central Office and controlled by it. At certain hours of the day the signal for opening the entrance is given for the subordinate and higher officers, as well as for the labourers, who are only allowed in after their names are called out. The same thing takes place of an evening when work is concluded: except during working hours no labourers, etc. are let in or out. On completion of the day's work and calling of the roll, the buildings are watched by guards on the outside. The captain of an incoming ship is not even allowed to sleep aboard his vessel. When the ship arrives, all the sailors are discharged and do not see their boat until she goes to sea again. To the left and right of the large entrance-gate of the Docks stand the Customs Office and the Excise Office.

20. After gazing in awe at these huge areas with their strictly regulated activities I wandered a mile farther down to the West-India Docks situate at Poplar. In general they correspond structurally with those of the London Docks, and only differ from the latter in that they fall into two divisions, of which one is intended for inward, and the other for outward bound (Export Dock) ships. I likewise found here

the hugest cellars and vaults for wines and spirits, which however are supplied with natural light: long sheds resting on cast-iron pillars run along the banks as with the former, and the discipline is similar.

21. Yet another mile farther down on the northern bank of the Thames the East India Docks bring these extremely interesting warehouses to an end. They are also partitioned off for Inward and Outward Bounds. On the southern bank of the River are still to be seen the Greenwich or Commercial Docks which communicate with the Grand Surrey Canal, but as they are said to be far less important than those mentioned above, I did not visit them.

22. Our lengthened stay afforded an opportunity of my getting into closer touch with several departments of Natural Science which were hitherto foreign to me, and which I had at least to take advantage of according to instructions received. The British Museum, the College of Surgeons, as well as the Botanical Gardens at Kew, the Zoological Gardens in Regent's Park, and the Museum of the Zoological Society were in turn my almost daily resort.

23. Sir Hans Sloane at his death in 1753 laid the real foundation of the present-day very extensive and remarkable (British) Museum for the whole range of Natural Science, for Ethnography, Archaeology, and Art, when he bequeathed to the Nation his significant Natural History Collections and Art treasures, out of which in the course of years this important and most comprehensive institution has taken its rise.

24. Alongside this stands the College of Surgeons or Surgeons' Hall, celebrated for its excellent collection of anatomical preparations. I had the good fortune to become personally acquainted with its loveable Director, the celebrated Professor Owen, whose tall, handsome and manly figure, combined with gentleness, amiability and integrity of character, charm every heart at the very outset. Under his friendly guidance, I got to know this important Institution: he also showed me his work on the *Lepidosiren paradoxus,* at that time of interest to all Zoologists and comparative Anatomists, that was occupying his whole attention, the collection having just received a specimen from Brazil.

25. The Botanical Gardens at Kew must have at one time proved the scene of tolerable disorder, a state of affairs which the never-tiring hands of its present Director, the amiable Sir W. Hooker, with his recently inaugurated règime had been able to rectify only to a certain extent.

26. Of remaining Lights of Learning with whom I had the good fortune to become intimate, I must mention with deepest respect and honour Messrs. Lindley and Bentham as well as Dr Natterer the celebrated Austrian traveller and naturalist, who was just then staying in London.

27. Amongst the many private collections which I had an opportunity of visiting, there was one that particularly engaged the whole of my attention: it was the beautiful really fairy-like collection of humming-birds, the property of Loddiges, the market-gardener, containing all the species of this interesting family at present known, and considerably richer in them that is the British Museum. The perfectly natural and tasteful way of stuffing, and the charming method of grouping them on the part of Loddiges Jr. has made the room in

which the collection is set up, a regular Wizard's Den. The comprehensive collection of Orchids and Palms belonging to these gentlemen likewise deserves the most praiseworthy mention.

28. Another friend I must not omit to mention: the mother of Captain Marryat, the novelist—also a general favourite in Germany—by whom my brother and I were several times invited to her pleasant and pretty country-place at Wimbledon and with whose family we spent the happiest of hours.

29. As the preparations for the Niger Expedition, so unfortunate in its results, were being carried out at the same time as those of my brother's, we, the Germans of both undertakings, used to chum together, and it is with the most painful emotion that I now recall the hours spent with Dr. Vogel and Rötscher of Freiburg, the mineralogist, when we gazed into the future full of hope and most flattering expectations, and had already met again in spirit for a mutual exchange of past experiences. Rötscher returned home, like both of us brothers, but poor Vogel lies covered beneath the damp swampy soil of the deadly Niger.

30. Ought I, finally, to amuse the indulgent reader perhaps with the many extremely ridiculous breaches of English etiquette over which I so often put my brother in a fix? Thus, when with innate German courtesy and chivalry after the most approved style, I greeted a lady next to whom I had sat at table the evening before and whom I met the following morning—she turned her head aside with an expression of contempt: according to English custom, the gentleman must never be the first to acknowledge a lady in the street. On another occasion a worthy and distinguished individual called to me at table, "Mr. Richard, may I have the honour of drinking a glass with you?," to which I, having already drunk sufficient and remembering the old *ne quid nimis*, replied "No, I thank you" whereby I unconsciously offered him so gross an affront that he at once jumped up and measured me from top to toe, his eyes aglow with anger, when my brother managed to explain that I, of course, had not had the slightest intention whatsoever of insulting him, but had only answered him as any German would. Very often in the streets my badly pronounced broken English would cause the greatest embarrassment and draw the most ridiculous misunderstandings in its wake—but I let all this pass and am only quite sure that I had to pay honestly for my apprenticeship.

CHAPTER II.

Departure from London—The Travelling Party—Captain Rothwell—Sea-Sickness—Experiments with Sea-weed—Crossing the Line—The New World.

31. In spite of the eagerness and haste with which our preparations were carried out, it was nevertheless the 19th December before we could leave London. The expedition, consisting of my brother as commander, Marine-Lieutenant Glascott as assistant, Mr. Hancock as secretary, Mr. Walton as artist, and myself as volunteer, travelled by passenger-steamer to Gravesend to catch the good barque "Cleopatra" that was to convey us to the goal of our wishes: she had already been tugged there by steamer from the West India Docks where she had been freighted.

32. Unfortunately, the 18th December upon which we might have sailed, proved to be a Friday, when the order of a captain to up with anchor and leave the Docks could only be expected to be obeyed under circumstances of necessity, for every sailor cherishes the firm belief that a sea-voyage commenced on a Friday, can only terminate in misfortune and loss.

33. It was dark when we reached Gravesend and got a boat to transfer us to the Cleopatra, already lying at anchor, where we found everything in an upset. Honest Captain Rothwell, known to and esteemed by all travellers to the West Indies, introduced us to his wife who for several reasons would have considered it one of the greatest of conjugal crimes not to accompany her husband on all his voyages: she shook hands with us cordially, and bade us welcome. Both husband and wife were Scotch. Captain Rothwell had gained his first laurels fighting with the celebrated veteran regiment, the "Scotch Greys," at the battle of Waterloo, which continually formed the most brilliant topic of his interesting conversations. Of course, like all his compatriots, he gave the credit of the victory solely and alone to Britain. Rothwell was one of those straightforward and blunt natures often to be found among sea-farers, was fond of his glass of stiff grog, and at table, preferably over a glass of wine, he would tell us about his adventures by land and sea, never reflecting that his interested hearers were emptying a glass more than they otherwise would have done. Every happy face was cheery sunshine for his humour, every sad one a gloomy cloud in a radiant sky: he enjoyed everything beautiful in whatever form to be met, or wherever to be found. Mrs. Rothwell learning this thoroughly throughout her happy married life, must have concluded from experience that it were better for kitchen and cellar—because the captain had to see to the victualling of the passengers—as well as for her lord and master if, during the voyage, she were to take both the former and latter under her special management and exclusive care. I still remember with a smile the lively quarrels that usually broke out of an evening in the captain's cabin after having got Rothwell to talk at table about Waterloo when, recognizing what brave lads we were, he would call for one flask of rum or wine after the other, with a view to save himself spinning his yarn dry, and our having to wind it up thirsty. The lively remonstrances of his spouse against such waste and the loss it entailed in her cash, were generally answered by a loud snoring proceeding from his bunk,

34. In the cabin we found our two fellow-passengers: a pale young lady with those wistful limpid (*tiefsinnigen schwimmenden*) eyes so characteristic of Englishwomen that renders them so very charming if at all backed by a nice complexion, and a young Scotsman who, as it turned out later, was a Customs officer on his transfer out to Georgetown. The former was hastening yonder to an uncle and possibly to a rich husband, a calculation that unfortunately proved deceptive, because after a three years' stay she returned to London without one.

35. The narrow quarters soon broke the ice, mutual acquaintances were struck up, and the usual bets made between the prospective passengers as to the day upon which we would reach our longed-for haven. Each one fixed the amount he wagered on the day we were to touch *terra firma* at Georgetown, and everybody hoped he would pick the right one and win the stakes.

36. We were awakened already before daybreak by the lively bustle and noise taking place on the decks together with the rhythmic singing of the sailors while heaving anchor, and the steamer that was to tow us again to-day as far as the mouth of the Thames, soon put in her appearance. Thick snow covered the banks of the river. The nearer we got to the mouth, the higher towered the waves, the more unsettled became the motion of the ship, the more rapidly I experienced those uncomfortable sensations premonitory to sea-sickness. We had hardly left the estuary than I fell a victim to the wan ghost. During ten days of anguish I lay for the most part unconscious and ate nothing whatever except a few oranges. What were the hours spent in groaning when I first got sick crossing from Holland to England, as compared with what I suffered here? The condition in which one finds oneself is simply horrible. The heavy dull oppression in the head, the limited and yet augmented breathing of the chest, the painful cramps in the stomach, the cold sweat productive of nausea at the very sight or smell of food, the continual thirst that never can be quenched, the everlasting longing and yearning of the spirit when everything is centred in one single hour's stay upon solid ground—all these torments collectively can only be appreciated by one who has suffered sea-sickness in the wholesale line like I have.

37. Banished to my sleeping-quarters I had not the slightest idea whether we were still in the Channel, or already making our way across the boundless sea: indeed I believe my apathy for everything external must have reached such a pitch that, had the Captain told me that the ship had stuck on the top of Chimborazo I would have stared at him just as unconcernedly as if he had only come to grumble that we had not yet passed the Straits.

38. The sun of December 29th shone so invitingly through the port-hole, that I suddenly felt the wish awakening to try at least to reach the deck. The worst of the complaint was over: I succeeded in the attempt. But what a change had taken place in the surroundings since my last visit! My eyes looked in vain for land, only a few sea-gulls (*Sterna*) that swarmed around the ship, indicating that the coast could not be very distant. The favourable wind had quickened our journey through the Channel and we were already in the Atlantic.

39. How I envied Mr Richie, the young Customs officer, who had never suffered sea-sickness for a moment, although this was his very first

sea voyage. My other fellow-passengers were the true reflected images of my own miserable self, and the poor young lady, from the time of my disappearance, had shown herself outside of her cabin just as little as I had.

40. But though feeling as much revived by the fresh sea air, in place of the musty and evil-smelling atmosphere of below-decks and cabin, as I was cheered by the boundless area of the Ocean, with Heaven's vault resting on the horizon, I was nevertheless soon forced to seek that hateful confinement again: the distant sky had suddenly changed and a few squalls seemed to indicate the brewing of a storm. Everything remained quiet up to evening: the ship coursed through the waves fairly comfortably, and we turned in with the conviction that our fears had been groundless. We could hardly have been asleep an hour, however, before we were awakened by the violent and irregular motion of the vessel, and anyone who had not lost his senses through sea-sickness, could surely have realised from the powerful rocking, creaking and rolling of the boat now wrestling with the up-rooted and unfettered waves, from the shrill orders of the Captain shouted through a speaking-trumpet, and from the yelling uproar of the sailors attempting in vain to overwhelm the howling of the storm and the smashing of the waves against the ship, that a hurricane had burst upon us in all its fury.

41. For me, these first few seconds were the worst. The noise of the slackening sails, the oft-repeated vain attempts at reefing them, the confusing clatter consequent on the storm breaking its force on the loosely-hanging canvas before the sailors succeeded in gaining its absolute mastery, the rattling of the chains and cables that drowned every word spoken by the men, all combined to produce so bewildering an effect that the most firmly determined will must have yielded to the excitement. I dashed on deck, then down again: everywhere the same upset. Though stunned by the confusing din and uproar of the natural elements unshackled in all their rage, I at once thought that the material and human contents of the cabin were suffering jointly and individually from an attack of St. Vitus' Dance. Everything that was not clinched and riveted flew in the maddest fashion from the one side to the other, and fortunate was he who, even proceeding with the utmost caution, was not thrown down, rolled along like the play-ball of Fate, and dotted over in black and blue, before finally reaching his intended goal. The storm raged until the 2nd January and reached its greatest violence during the night of 31st December to January 1st. These were days of real discomfort and terror: a gloomy grey sky and sea, through which here and there black spectral clouds rushed like ammunition-carts to the field of battle. The breeze howled and growled in deafening din; creaking and loudly shrieking it bore along with it the moaning and the groaning of the masts and the dull thundering of the block and tackling tumbling up against them, while the high plunging waves, greedy for their prey, stormed the vessel's frail planking which quivered in its very joints, or else they hid the ship momentarily in their watery arms and tore off from her decks everything that stood in their way.

42. Even though the terror and confusion in the cabin were amply sufficient on the outbreak of the storm they were now increased to a much higher pitch. My dreamt-of courage succumbed, and involuntarily there crossed my memory during this awful New Year's Eve the previous ones

that I had so often spent in completely different surroundings, in quite another frame of mind. Ought I to regard this stormy anniversary an omen for my future?

43. On the 3rd January the sky cleared and with it the troubled faces of the passengers. We found ourselves in the latitude of Madeira. The thermometer already registered 16° R. in the shade. The stoves were banished from the cabins, and everybody was busy getting his summer clothing out of the boxes and trunks, while the sun, with all its warmth and animation, now beamed upon the passengers numbed with cold, care and anxiety. Our pale young lady with the limpid eyes, which the awful days had almost dulled, again took her place with us. Only poor Hancock still lay groaning in his berth: the storm had mercilessly missed him alone whereas in the case of us others it had driven away the last vestiges of sea-sickness.

44. If Mrs. Rothwell had hitherto regarded the disinclination for food on the part of her boarders with inward satisfaction, her face now took on an appearance quite opposite to that of the cheery skies, her former sunny aspect changing to one of heavy thunder clouds: for the cook could hardly meet the impetuous demands of the famished folk, and scarcely an evening passed but an echo of the recent storm sounded over to us from the Captain's cabin.

45. The deck was henceforth my home which I could only be induced to leave by the bell for table, and the craving for a rest. Now for the first time I learnt what real life and activity on board a ship meant, and watched with delight the discipline and order that, through the forceful command of the Captain, reigned over everything. Almost every day the deck was scoured, every morning before daybreak it was swilled. In storm or calm, by day or night, a single word drove the sailors as quick as thought to the extreme end of the rigging, and the hardly ten-to-twelve year old apprentices, up the very tops of the masts.

46. The long drawn-out though recently freed waves towered majestically aloft, and seemed desirous of swallowing the vessel gliding down into their deep furrows. The water had already assumed its beautiful indigo colour, and whole herds of sporting Dolphins or Sea-hogs (*Delphinus Delphis*) suddenly emerged above the surface, and then as quickly dived into the unfathomable depth, until a number of the festive party would be hit by our weapons, when together with the whole school, it would clear away for good. We were still accompanied even by some sea swallows which now and again when tired would settle on the sails for rest. Woe to the daring individual who might venture to kill one of these birds: the anger of the entire crew would embitter his every moment of the voyage, for sailors recognise in them the ghosts of their deceased mates who always accompany their former ship. They are a peculiar people, these sailors: in their conceits and dispositions quite a true image, but mostly a reversed one, of the prevailing weather. The Storm is their real element, the inert Calm their time for growling and for indolence, until, on the sound of the cease-work bell of an evening, they collect on deck and try to while away the hours and discontent in winding off their yarns. At such times, often as an attentive but unobserved listener, I enjoyed their powerful descriptions of adventures experienced and storms successfully encountered, or else amused myself with their still more vivid chanties. On week-days one

cannot find any better descriptive name for them than "tar-jackets" because they then are really stiff with dirt, our cook not excepted: on Sundays, on the other hand, they look as if they had just come out of a band-box, and the tidied-up youngsters then proudly parade the decks.

47. We had by now reached the latitude of the Canaries: our splendid sailer skimmed the seas as briskly as a bird: and with the fresh wind also holding up we could usually make from six to eight knots an hour. Though already inspired at sun-rise and sun-set by the sight of the limitless element, my enjoyment was further enhanced with oncoming night when the sky stretched itself out above us with its constellations and equally innumerable falling stars, when the moonshine fringed the half transparent edges of the lightly curled waves, and the ship seemed to swim in a sparkling sea of fire. More or less large luminous globes swarmed over the whole wide expanse, and with every furrow that the proudly sailing vessel cut into the approaching waves, the sparks, flying like glowing iron when struck with a heavy hammer, momentarily lighted up its immediate surroundings.

48. During the day, on the other hand, my attention was drawn to the immense masses of sea-wrack or sea-weed which from now onward surrounded the ship. The heaping up of this mass of vegetation has often been the subject of the most versatile speculation, and extremely varied views have been expressed as to its origin. Alexander von Humboldt having charged me on my departure, to make every attempt possible to propagate the sea-weed in barrels, I fished up huge quantities on the outward and homeward voyage, and found all the manifold varieties that have been described, but never a root to which the plant was attached. I kept larger and smaller pieces of plant in a number of tubs, supplied some of them hourly, others daily with fresh sea-water, while others again I left in that originally given them: yet all became black and were already spoilt within the course of two or three days. On the outward voyage, in January, notwithstanding the most careful search, I never succeeded in finding fruit, whereas on my return in the months of June and July, they were absolutely overstrewn with them.

49. When fishing up a parcel of it in the dredge-net, I at the same time drew on deck a complete world of molluscs, jelly-fish, sea-squirts, cuttle-fish, rotifers, crabs and smaller fry, amongst which the beautiful *Physalia utriculus* and *Caravella* ("Portuguese Man-of-war" of the sailors) particularly interested me. It afforded us the most beautiful sight, when with their lovely coloured tentacles, innumerable specimens passed us by.

50. The nearer we approached the Equator, the more did our fellow-passengers and sailors who had already crossed the line chaff those of us who were now about to do so for the first time. If one of the ship's apprentices had done a kindness to an older experienced sailor he could rest assured that the latter's thanks would contain some consolatory reference to the baptismal tonsure at the fatal Line. So when we did get there finally, it was known that we harmless people were to be decoyed on deck. Here on arrival we suddenly found ourselves surrounded by sun-burnt faces, and saw Neptune in a sheep-skin turned inside out and fringed with dripping sea-weed, emerging from the hatchways to settle himself on a huge water-barrel. With eyes bandaged, each novice is

now led before his throne, roughly enough lathered by him, and then shaved with a huge ship's cutlass: ten or twelve of the sea-god's Tritons stand ready with buckets full of salt water, to wash off the suds left remaining. If we four passengers who crossed the Line for the first time were properly lathered and sonsed, it fared much worse with the poor ship's boys and sailors who stood on the same footing as ourselves. The patient lambs for slaughter, who well knew from others' accounts that any useless opposition would only tend to amplify the act of endearment, were first of all tied under the ship's pumps to have the dirt washed off so that they might appear spick and span before the deity who loves cleanliness so much. After being half-drowned and released, they were mocked, and scoffed, and comforted with dry and piquant remarks interlarded with the most forcible flourishes of rhetoric. One of the Tritons came up with a vessel full of wet sand and powdered them with such violence that blood ran down their pallid cheeks when he led them before the Barrel of State. Here Neptune, with not exactly a light hand, used his ship's cutlass to complete the shaving of the poor victims, now screaming and wailing most piteously the while, as the jubilant Tritons poured innumerable buckets of sea-water over their heads. However funny the grimaces of those to be baptized might prove to a spectator at the beginning, he nevertheless felt the deepest pity for the poor young fellows during the course of the procedure. But were a captain to abolish this day of gaiety and enjoyment for his crew, the reputuation of his ship amongst sailors would be lost, whatever big wages he might offer them.

51. The temperature, ever becoming more sultry, was already tiring and oppressive; the sheet-lightning increased; countless shooting-stars crossed the vault of heaven in instantaneous flight and the glorious constellation of the tropical sky, the Southern Cross, soon showed ahead, while the hitherto guiding polar star was sinking into the depths behind. Closely packed swarms of flying fish rose several feet above the surface to escape the pursuing Tunny (*Scomber Thynnus*) or our own swift ship, when, after a flight of often 20 to 50 paces against the wind, they either fell back into their element, or were driven on to the deck, where the sailors welcomed the spoil. The brisk contest carried on between the tunny and the sailing-ship is interesting; the fish seem only to think it a little joke, because, though often springing above the surface, they never remain behind their rival.

52. On the afternoon of the 21st January I noticed that the colour of the water was essentially changed and had assumed a muddy yellow-brown colour. Immediately after, I was very glad to see in the distance numerous swarms of sea-birds that more or less slowly drew hither and thither over the surface. But I was still more pleased when somebody clapped me on the shoulder and Captain Rothwell's blunt voice shouted "Now, Mr. Richard, to-morrow morning early you will have your wishes fulfilled: to-morrow you will see land and soon stand on *terra firma.*"

53. Mr. Walton was the prophet to be acclaimed victor: to-day was Thursday, and to-morrow Friday, the day upon which he had betted, and he consequently took the pool.

54. Daybreak found all the passengers collected on deck, earnestly seeking the promised land. As if still swimming in the haze, a small dark fringe suddenly appeared on the horizon and a general "Thank

God" on the part of the passengers proved their greeting to the New Continent. All the ship's telescopes were fetched up, and quickly handed from one to the other. The continuous fresh breeze that was speeding us to our destination, gradually scatterd the envious morning mist, and the several outlines of the shore became gradually more distinct, until finally the coast itself, covered with thick masses of foliage, appeared sharply defined. The crowds of birds that had been previously noticed in the distance were already swarming around our vessel in cheery clamour: amongst them the beautiful Frigate-bird (*Tachypetes aquila* Vieill.) apparently wanted to choose a perch on the highest top of our Cleopatra.

55. It was only to-day that we reluctantly answered the clear summons of the mid-day bell that called us for the last time to table where Captain Rothwell, in spite of the liveliest remonstrances of his wife, surrendered as best he could the last remnants of his champagne which was nevertheless drunk with the liveliest enjoyment. Our impatience did not allow of us staying long below, and we quickly gathered on deck once more. We had approached the coast so closely in the interval that, without glasses, we could not only see the proud palms rising above the dense foliage, but also the peculiarly constructed lightship which, with its far-reaching beacon serves to guide in-coming vessels at night: the vessel at the same time constitutes the Station where every over-sea ship must pick up a pilot, because, without one, the entrance into the Demerara mouth would prove fairly dangerous. About four miles out to sea and stretching across the mouth there is a large sand-and-mud bar with only two channels of which one is 9 feet deep at half flood, and the other (the eastern) 19 feet at high flood, so that no vessel that draws more than 18 feet can cross it. Once the channel is passed and the mouth of the Demerara reached, the River itself affords the safest and most convenient harbour that could hold the whole combined fleet of Great Britain. The arrival of every ship is signalled from the Lightship to the Lighthouse in the City. As soon as we came in line with the Lightship, a row-boat came off with the pilot, a coloured man, who now took over unlimited command, so that Captain Rothwell for once in a way was given a rest. The negro pullers were naturally enough regarded by us new-comers with curiosity.

56. With the dangerous bank soon astern, we shortly afterwards ran into the 4 mile wide estuary of the Demerara. The land I had yearned and longed for, the land of fairy fancy, of blood and terror, of the most effulgent hope and expectation for the people of Europe, the land where the dignity of man has been trampled under foot so long, but where now is risen a modern era which is already illumining the distant Future with its initial brilliance—the American continent stretched out before me.

57. A number of boats, fishing-smacks, sloops with three-cornered sails, schooners, even two barques that had passed the channel shortly before us, were forging their way in a motley throng towards the mouth, while the dense tropical vegetation with which Georgetown or Demerara was regularly veiled, prevented us from satisfying our inquisitive gaze: we could only see the majestic Lighthouse with its proud summit and the gaily flying flag through the enveloping cover, and then follow the

huge boiling-house chimneys of the Sugar Plantations situated on the western bank all surrounded with beautiful cabbage palms (*Areca oleracea* Jacq.) and Coconuts (*Cocos nucifera*). The *Rhizophora Mangle* Linn., *Avicennia nitida* Linn. and *Laguncularia racemosa* Gaert. form the coast and river fringes, of which the two latter stretch along the uncultivated waterside and sea-shore in thick uniform hedges. In the distance they looked just as if they had been trimmed with shears and from behind their dark invigorating verdure there peeped the pleasant buildings of the Estates, until finally on the right or eastern bank, bordered by the hundreds of masts of merchant ships, schooners and sloops at anchor, Georgetown, the capital, presented itself to view.

58. The sun was already hurrying towards the western horizon as we slowly made our way over to Fort William Frederick which is closely connected with the Lighthouse where our ship's signal still fluttered, along through rows of merchant vessels under English and North American flags, whose sailors had crowded together on the decks to watch the incoming Cleopatra and welcome her with a general Hurrah! The crews of the coastal boats consisted for the most part of half-naked negroes and mulattoes who were busily discharging ground provisions, and enlivening their labours with strange sorts of songs. Along the banks the city showed nothing but an uninterrupted façade of wharves built on posts, with huge cranes, baggage-stores and warehouses which were given life to by the bustling agency of human hands: behind them again there rose slim cabbage and coconut palms which thus hid the remaining portions of the capital. The Western bank certainly did not show so lively but yet none-the-less interesting a landscape. The thick border of *Avicennia* and *Laguncularia* concealed in part the Estates' residential quarters and boiling-houses, enclosed as they were on all sides by hundreds of small nigger-huts, together with their towering chimneys which in perspective ever became gradually reduced in size until they finally indicated but the site of cultivated areas lying farther inland, where a bluish yellow evening haze limited the far horizon. The steamer that is always keeping up communication between both banks, as well as the innumerable boats that assiduously cross the river next attracted our attention.

59. After a long and fruitless search, the Cleopatra found a berth and to everybody's satisfaction the anchor rattled down onto the soil of the New World. But our wish to sleep on shore to-day was not fulfilled. Evening having set in we were forced once more to be satisfied with our cabins:—my brother alone landed so as to wait upon the Governor without loss of time next morning. Immediately after his departure the Customs-House officers paid us a visit.

60. In the evening, we heard the singing of the jolliest songs on the ships which, according to the distance of their anchorage, finally became blurred into single chords: the skylarking and noise betrayed the sailors' dispositions, while in between a few crude or melodious sounds of different instruments managed to reach us. Nature had been resting already long in deep repose, when Man alone showed he shunned its sovereignty: for the dull thunder of the cannon at the Fort that lightly rolled over the ruffled surface of the rivermouth and only died away in the far distance, notified the

tatoo, and found its echo in the peal of bells on the merchant ships and in the booming of the huge signal-shells of the coasters, until these also were hushed, and the glorious music of the military in the barracks close to the garrison was wafted on the gentle breeze, soft and enlivening, over to us. The previous merry fun and frolic on the decks was now followed by the deepest silence, only to be broken by the waves splashing against the ship's planks at high water, or by the isolated call of a captain for the boat which was to take him back to his ship.

61. On an average, the current of the River amounts to $2\frac{1}{2}$ knots, while at the mouth, owing to the falling of the tide, it is often increased to 7 knots an hour, *i.e.*, 11.9 feet per second.

CHAPTER III.

Landing—Georgetown—Historical Retrospect.

62. Just as the firing of cannon had signalled the onset of night, a similar one notified the breaking of day; the Reveille sounded through the yet silent city streets and recalled to life fresh energies and renewed activities. Innumerable boats, laden with produce from the estates, were rowing with and against the stream from the west bank and from farms situate further inland, towards the capital, to supply it for the coming day with Plantains (the fruit of *Musa paradisiaca* Linn.), Maize, Vegetables, Oranges, Poultry and Fish: others were engaged in capturing the denizens of the deep, to return with them in due season. In the midst of this engaging tumult there gaily sounded the strange chirp and twitter of the larger and smaller birds that were searching the thickly leaved trees of the bank for spoil, or flying to greet the opening dawn, while the anchorage was being gradually filled with noisy and squalling negro women who were waiting to buy the cargoes of the incoming boats.

63. Our impatience would no longer be curbed and so, full of mischief and delighted with the glorious morn, we jumped into the boat that was to convey us to shore. It was only with difficulty that we managed to force our way through the noisy crowd of black, brown, half-naked huckster-folk of Georgetown collected there, who looked upon us with as much surprise and curiosity as we regarded them. To our great satisfaction, the wide street we followed ran direct to the Lighthouse Tower, which straight away prompted us to take a view of the city from its top. After climbing the 140 steps leading to the gallery, a wonderful panorama unexpectedly came into view. Dumb with surprise and delight, the eye swept over the heaving and billowy seas as far as the distant horizon where Earth and Heaven met: light fishing-boats pitched and tossed upon the ruffled waves, to disappear a moment later, while a ponderous coaster would skim its way through them. Below, there glared at me the thick forest of masts and flying flags. Spreading itself before my delighted gaze was the city with its nice wooden gaudily-painted houses, its overtopping churches and Public Buildings, its thousands upon thousands of slender palms, its broad busy streets, and its many canals that ran through it like so many veins: it was enclosed by more or less distant sugar estates with many a smoking chimney striving after heaven, the characteristic, as it were, of modern progress. Far away to the Westward I noticed the darkly-fringed shores of the Essequibo, while the Demerara rolling past beneath us ran like a silver band through the smiling plain, and waltzed its waters into the greedy ocean.

64. The peaceful and romantic valleys, mountains and plains of our native land do not possess the infinite charm and delightful matutinal fragrance of the tropics:—the wanton vegetation, the vigorous fresh green amidst a dense dark foliage, the generally prevalent marked contrast of conformation in the world of plants, the tropical climate, the

tropical sky is all foreign to them. It was long before we could turn away from the charming picture, which changed with every second while fresh attractions and new surprises showed up with every peep, whether we took it near or far, over the breadth of the ocean, or across the extensive plains of the coast-line. Hardly had we left the Lighthouse Tower than we heard the question "Qu'est-ce-que-dit?" repeatedly asked us from out of the neighbouring palms and foliage trees. In wonder and surprise we turned to look for the inquisitive fellow, at first however in vain, until we finally found him to be a yellowish bird about the size of a thrush, that must have been continually plagued with the most violent curiosity, for it renewed its enquiries without cessation. It was the *Tyrannus sulphuratus* Vieill., the "Qu'est-ce-que-dit" of the Colonists. To be or wish to be a Stoic, would have been impossible to-day, because every step brought something new to claim the whole of my interest and curiosity, so that at last I seemed to be like the boy from the country visiting the big city for the first time, when he finds his fairy fancy-pictures far and away surpassed by the brilliant shop-fronts, and the everlasting scurry, hurry and hustle of the inhabitants.

65. The streets through which we roamed were broad and intersected with spacious canals, while the wooden houses, rarely more than two storeys high, that stretched along them, were shaded by a row of palms (*Areca oleracea* or *Cocos nucifera*): with few exceptions a garden enclosed each one, which was divided off from its neighbours by a canal or ditch. Nature, the ever-labouring mindful mother was the one and only gardener to have a free hand in almost all these grounds, though I also found several which were not only very tastefully planned but were kept in regulated cultivation by the ruling and attentive hand of Man. Nice and prettily-winding paths, bordered with the most glorious Orange-trees richly overladen with their golden fruit; Erythrinas; big bushes of flourishing Oleander on pleasant verdant lawns; many a Jasmine, *Clerodendrum, Ixora, Poinciana, Bauhinia, Quassia, Melia, Gardenia, Punica, Iusticia, Hibiscus rosa sinensis* and *chinensis* overstrewn with their large red blossoms; Centifolias and Monthly Roses, which with the scorching climate had assumed a burnt colour; Balsams that grew like huge shrubs; Passion Flowers, Clitorias and Bignonias, the stems, branches and twigs of which had changed into floating garden-plots—everything reminded me that I was treading the land of Plenty, the land of Mighty Vegetation. Negroes with heavy loads on their heads, accompanied by little boys and girls likewise securely balancing a bottle or basket with glass-ware in similar fashion, mulattoes of all shades of colour, carts with jarring wheels dragged by panting mules, all hurried and scurried past me in such bewildering confusion that what with all this disturbance, my attention was at last completely lost upon any one particular object until it found itself centred once more upon a negress who was carrying upon her head a bucket full of crystalline material. I could not satisfy myself that the stuff was really pure ice before touching it, and a voice close by, "By God, pure Ice!" expressed the sensations which the surprise, still obvious, had aroused in me. "Ice, by God, pure Ice!" Agreeably shocked I turned round and behind me stood a vigorous young fellow whose good-natured astonishment immediately indicated he was German. My greeting of "Good morning, countryman!" almost

choked his South German "God greet you" (*Grüsch Gott*)! After our mutual delight and wonder had subsided, I learnt from the genial Swabian that he had arrived the day before in company with 100 Rhinelanders, Wurtemburgers, and Swabians who, like their countrymen before them, wanted to try their luck. A second ship from Madeira, with Portuguese, attracted by similar ideas, reached port at the same time as they did: several pale, lean, male figures, with their heads covered in a dark blue cloth cap tapering to a 3-inch high rat-tail tip, confirmed the truth of the statement.

66. My brother's voice—he had recognized us in the crowd—soon brought us to his side; he was also astonished on discovering a countryman in our acquaintance.

67. My brother, unfortunately, did not find the house that his friend Mr. Stutchbury had hired in advance for him, quite ready for occupation, and was consequently obliged in the meantime to take some other rooms that he had formerly occupied.

68. Tired and bewildered with all that we had seen, we now returned to the ship to arrange for the landing of our things, and were not a little surprised to find, on stepping aboard, that Mrs. Rothwell had already prepared an excellent breakfast consisting of the loveliest Oranges, Pine-apples, and other tropical fruits hitherto unknown to me: the first were exquisite, the mealy fruits of the *Musa sapientum* and *Mangifera indica* Linn. on the contrary, being none the less relished for their sweet and delicate taste. Night, that comes on so suddenly here was fast approaching when, with the luggage most required, we took possession of our temporary quarters.

69. Yesterday evening's or rather last night's wealth of charm was repeated to-day to perhaps even a higher degree. Considering that the most accurate description by a poetic soul however richly blessed must ever remain but a silhouette of the real article—for language of the most ardent nature can never enravish and ennoble the reader's thoughts with the sentiments that captivate and overwhelm the traveller who derives pleasure from such experiences—how could I venture to express the feelings that stirred my inmost soul when, after sunset, the almost overpowering balsamic fragrance from the gardens opposite penetrated each open window, when every stalk and every leaf of the gently swaying foliaged domes of luxuriant trees seemed to whisper in an unknown tongue "Stranger, don't forget us, but keep the memory of this enchanting Present ever green until the Future winds us and our mates in its pale and chilly shroud, when all will finally be forgotten." How can I describe what I felt when the shrill chirrupy chorus of countless Cicadas and crickets resounded high and low, when the cloudy haze, illumined by the brightly shining moon and Venus' equally brilliant star-light, enveloped the whole of the surroundings in a semi-transparent veil that was being crossed by thousands of luminous insects such as *Lampyris phosphorea* Linn., when fantastically dressed wayfarers, with open umbrellas to protect them from the harmful moon-beams and equally noxious evening dews, filled the intersecting streets, or when the lightly wafted breeze brought over to us from distant portions of the city the crude and noisy music of melancholy songs, of negroes at a dance. I sadly missed for once the pleasant evening twilight hours of home. America recognises no intermediate step in the change between these

two divisions of time: Day presses closely onto Night, as Night presses into day.

70. Overwhelmed with all these vivid impressions, it was only late in the evening that I turned into my hammock where I nevertheless vainly sought repose: the open window allowed thousands of bloodthirsty mosquitoes to sprinkle the first drops of bitterness in my cup that was yet bubbling in an ecstacy of delight.

71. Daybreak at quarter to six, with yesterday's bustle of blacks and half-breeds renewed afresh, already found me at the open casement.

72. The news of our arrival must have spread quickly over the city for the friends coming to greet and welcome my brother soon filled our rooms. After introducing me to the Governor and families of his acquaintance, I became so inundated with invitations that I spent my first week in a real whirl of enjoyment when the impressions recently experienced were blotted out by new ones, until at last, after settling down into our own quarters and unpacking and arranging our effects, the Quiet that had been lost sight of, helped somewhat to revive them.

73. The pretty little house situate in Camp Street, surrounded by slender palms and plenteously-shaded foliage-trees, with its cool and airy gallery and its widely projecting roof was satisfactory from every point of view. The only thing to worry over was the high rent that my brother was forced to pay, for although it only contained some small rooms, he was nevertheless charged 54 dollars a month: to be added to this were the extraordinarily high expenses of living, which made me very uneasy concerning my annual travelling allowance of 432 dollars. Georgetown is one of those cities of South America where almost every hour's stay has to be weighed against gold.

74. According to the plans laid down for efficiently carrying out my work, I ought now to set down in chronological order all my experiences in the city proper, as well as its environs, in fact give an account of its whole inner and outer activities during the longer or shorter visits I paid it at different times. But to avoid repetition I am including my subsequent observations with to-day's and yesterday's and will attempt to sketch so far as it lies in my power, a true picture of the civilised portions of this English possession, which bids fair to be of so much promise in the future, as well as of its capital, and propose commencing with its historical, statistical and topographical aspects. I leave it to the judgment of my readers whether they approve or reject the method of description followed.

75. Contemporary historians are by no means in agreement as to who really was the first to find Guiana, considering that its discovery has been ascribed by some to Columbus, by others again to Vasco Nunnez, and even in part to Diego de Ordas who could only have landed on the Guiana coast in 1531. The earliest appreciable attempts at Colonisation were at all events established by the Dutch since 1581, but, as they themselves found traces of past cultivation of the soil, the Spaniards, in times previous to them, must have sporadically occupied the whole stretch of coast as far as the mouth of the Essequibo.*

---

* These historical notes, secs. 75 to 79, are unreliable. (J.R.)

76. During the years 1586 to 1596 the Dutch already had founded several settlements, from which they were nevertheless driven by the Spaniards with the assistance of Indians in 1596. Not at all disheartened by these failures, Jost van der Hooge established a new Colony called Nova Zeelandia, which, by 1613 must have found itself in flourishing circumstances. In 1602 the Zeeland merchants van Peeren, van Rhee, de Moor, de Vries, and van Hoorn arranged for a voyage to the Guiana Coast under the command of van Ryk Hendrickzoon, for which purpose a charter granting them exclusive trade-rights was drawn up for them by the States-General.

77. In 1621 the States-General undertook to supply the Colonists with Negro slaves from Africa, and now van Peer, who, with his companions, had been driven out of the Orinoco, commenced operations afresh at Berbice, whereupon a new colonisation company, leaving the Texel under command of David Pieterse de Vries landed in September, 1654, upon the island of Mecoria between the rivers Cayenne and Wia. Here again the emigrants found an old castle, which the French must have built, just as van der Hooge found a similar one in 1596 at the junction of the Essequibo with the Mazaruni the builders of which were probably Portuguese.

78. These various attempts seem to have induced several Englishmen to settle in the so-called "Wild Coast" Colonies: van der Hooge already found a party established in the Surinam River under Captain Marshall who, with about 60 companions, had settled on the site of what had formerly been a large Indian village, Paramaribo, but which nevertheless had to be abandoned owing to the many incursions of the Caribs.

79. These attempts of the Dutch and English proved the signal for other nations, which were now reciprocally dispossessed and re-established in one perpetual change. Thus in 1640 the French took possession of the earlier settlement of Paramaribo which they subsequently abandoned for the same reasons that had prompted the English, and in 1652 the latter were once more its masters. Equally potent quarrels arising within the States-General considerably hindered the prosperous progress of colonisation along the Coast until, in 1678, a treaty was concluded with the van Peere family whereby it was to retain posession of Berbice colony "for ever." The changing fortunes of War, however, during the past two hundred years brought the colonies of Berbice, Essequibo, and Demerara from out of the hands of the Dutch into those of the French, English and Spanish with the result that by an agreement between Great Britain and the Netherlands arrived at in 1812 they were handed over to the former on the stipulation that the Dutch owners were to retain trading relations, in limited restriction, with Holland. Under the sovereignty of Great Britain, agriculture and trade rapidly advanced, for already by that date steam engines were generally employed at the sugar-mills. The census of January, 1817 gave a Negro slave population of 77,163 for the Essequibo and Demerara Districts, and 24,529 for the Berbice: consequently the three districts between them owned 101,712 slaves, while at the same time the free population amounted to 8,000. From all statistical accounts this was the largest population the colony had hitherto held: it was

however considerably diminished in the year 1819 through the ravages of yellow fever.*

80. Canning's firm determination to improve the lot of the entire slave population in all the British colonial possessions, and to pave the way even for emancipation, was laid before the House of Commons, in 1823, and copies of this noble-minded resolution of the great statesman were despatched to Murray, the British Guiana Governor. For some reason or another the latter omitted publishing it without being able to prevent its contents becoming known. The earliest intimation of the existence of such a document, according to which something was said to have been done by England for the freedom of their slaves, was first of all received from one of the Governor's servants by certain headmen—black overseers of slaves on the individual plantations under whose direction the other slaves work—and the rumour soon spread over the entire East Coast that the order for their complete freedom had been received in the colony from England, but that His Excellency and the slave owners had kept the matter secret, and were trying to prevent it being carried into effect.

81· It was owing to this report that a conspiracy was hatched amongst the whole of the East Coast slaves according to which those who joined were to seize all the Europeans on the Plantaions, and then betake themselves in a body to the capital, and demand their freedom by force. The plans for this uprising were drawn up by two young negroes; Paris, a boatman of Plantation Good Hope, and Jack Gladstone of Plantation Success.

82. Under veil of the greatest secrecy, and unsuspected by their masters the scheme matured, and the 18th August was fixed for its execution. On the morning of that day the revolt blazed into flame, the rebels promptly seized practically all the Estates' owners, as well as the whole white population in general, who, some of them bound and some of them stretched on the stocks, were most cruelly ill-treated by the unrestrained and vindictive insurgents. Immediately upon receiving notice of it, the Governor headed a detachment of Colonial cavalry and started for the East Coast to quell the disturbance, but the superior forces of the raging rebels forced his speedy return. That same night all the free slaves were armed so as to permit of their leaving for the Coast at daybreak with the regular troops and remaining soldiery to liberate the imprisoned Europeans.

83· The insurgents, 2,000 in number, were collected at Plantation Bachelor's Adventure. A fair number were supplied with fire-arms which they nevertheless did not know how to use: the remainder carried cutlasses, bayonets fixed on poles, and similar weapons. Before Colonel Leahy, in command of the troops, took extreme measures, he tried to persuade the licentious crowds to lay down their weapons and state the reason for their mutinous conduct, but he was informed "that their Freedom and nothing else was the cause of their rising: the

---

* It is interesting to note that, in 1917, after an interval of a century, the estimated negro population of the Colony, according to the Report of the Registrar General, was 118,612, while that of the mixed races was 33,860 : a total of 152,472 souls, as compared with the total of 101,692 shewn in the census of 1817. (F.G.R.)

King had already despatched orders to this effect, without their having been told a word: that these had been illegally and irregularly withheld by the Governor in conjunction with the Planters, and they were now mutually determined to obtain their rights by force."

84. In spite of the Colonel's remonstrance that the statement was entirely false, that there was not a single word about complete civic freedom to be read in the royal decree, the insurgents persisted in their purpose and Colonel Leahy, being met by an insulting rejoinder on a last demand to lay down their arms, found himself forced to give the order to fire. After a murderous massacre the rebels were completely dispersed and, leaving behind a number of dead and wounded, put to flight. From the 20th to 30th August while Colonel Leahy and his troops were busy hunting for weapons on the different estates, and looking for the ringleaders, several of whom he captured, Mr. Hillhouse, followed by a considerable commando of Caribs and Warraus scoured the forests and seized the scattered fugitives. Many who were caught with weapons in their hands were generally shot or hanged on the spot, amongst them Paris, one of the arch-conspirators, while others, guilty of less active participation, received from 200 to 1,000 lashes.

85. But the trial of one Mr. John Smith, a missionary of the London Missionary Society, in whose church or very close vicinity the plan for the insurrection had been concocted, aroused the greatest sensation. The accusation made against him was that he had not only inflamed sedition by his preaching, but that he had become cognisant of the entire plot without denouncing it. He was tried by court-martial, found guilty of high treason, and sentenced to death with the right of petitioning the King for mercy, but died in prison before the Pardon arrived from England.

86. The expenditure which this uprising cost the colony ran into 200,000 dollars. It was the last attempt of the Negroes to obtain freedom by force, for the ever memorable 1st August, 1838, reduced the term of apprenticeship, originally fixed at four years, to two, it being felt that during the latter period the colonies would only have to suffer still more, and one willingly gave the slaves, ill-treated up to then, that which they more than once had striven to obtain in vain by rebellion. On that day a new Era rose for all the British colonies. Out of the 20 millions voted by Parliament for giving effect to the Act a sum of £4,268,809 was distributed as compensation among the Guiana Planters, though the value of all the slaves in Guiana, reckoned by the purchase prices from 1822 to 1830, amounted to £9,489,559.

87. It was to be feared that the temporary effects of Emancipation could only be detrimental to the economic and manifest welfare of Guiana, and these fears were realised to an extent of which perhaps no one even had an inkling. All the labour supply lay in the hands of the African slaves and, owing to the conditions and prevailing climate was the only source to be tapped. The sudden and unprepared-for transition from the condition of a slave who had no will of his own to that of a self-determining free citizen was one of the most powerful means of promoting the in-born and hereditary indolence of the negro. Work had hitherto only been a burden to this hitherto despised and ill-treated class who, forced by the rod of correction, had to submit to it: Emancipation

granted him the unalienable right over his own destiny, and at the same time the liberty to give free scope to his in-born tendency to habitual idleness. The hitherto bustling hands disappeared from the estates, and every former labourer there tried to purchase at the lowest rates his own piece of land: he could get his living from out of its produce with the minimum of trouble because his ordinary wants and the inexhaustible productiveness of the Tropics forced him to no great efforts. The scarcity of labour arising from this cause increased the daily pay to such an extent that the free negro who worked for one or two days could earn enough to live as he liked, comfortably, for the remainder of the week. Without exaggeration it may be stated that the estates lost two thirds of their labour supply which could by no manner of means be replaced, so that particular works which had to be taken in hand at definite times, however unusually fatiguing they were and however quickly they had to be completed one after the other, could not be undertaken at all or only very inadequately executed.

88. The European labourer thanks the man who gives him work: the free negro on the other hand, in addition to his pay, asks his employer to thank him for dedicating his services to him. So as to enable them to continue part-cultivation of the estates, the planters naturally compete with one another in the pay they offer these men and, even if offering the highest wages, one must still be considered fortunate to keep a servant, because the slightest inducement causes him to throw up his job: he knows quite well that ten other employers will receive him with open arms. Plantations that were formerly worked by 4-600 slaves do not possess more than 100 now. With the scarcity of labour, capital was also naturally withdrawn, and one estate after another went to ruin. Cotton cultivation had first of all to be abandoned, because it could not enter into competition with the North American article carried on with slave labour. All cotton plantations were turned into cattle farms and pasture lands: at present the coffee estates are following suit.

89. In 1841 Guiana owned but 213 Sugar estates, 67 coffee plantations, and 31 cattle farms. The produce of all the Plantations in 1842 amounted to 52,043,897 lbs. sugar, 1,543,652 gallons rum, and 1,214,010 lbs. coffee estimated at a total value of 4,583,370 dollars: as compared with previous years this gives a decrease, during the past five, of 55,762,352 lbs. sugar, 1,436,644 gallons rum, and 3,061,722 lbs. coffee at a total value of 5,648,269 dollars.

90. The chief solution for the best measures to remedy the present precarious state of the Colony lies in answer to the question: "Will the black population return to the condition they were in formerly i.e. will they want to work?"—to which, up till now as I have already stated, they only feel constrained so far as their own sweet will and momentary needs may prompt them.

91. However many also the efforts hitherto made to replace the lost supply of labour by Immigration, they have almost all proved unsuccessful on account of the awful climatic conditions, and so far have not managed to restore the declining value of the landed property. East Indians, Negroes, the unfortunate prisoners on forfeited slave-ships, Canadians, Portuguese from Madeira, even Germans all came on here with the result that already by 1842 Guiana had 20,071 immigrants

brought out at a cost of 380,000 dollars: yet, with the exception of the two first-named, none of them withstood the climate: the largest number fell a sacrifice to the never satiated Angel of Destruction.*

92. The few Hill-Coolies justified to the fullest extent the hopes that had been placed on them, because with the honest will to work they are the best to defy the attacks of the tropical atmosphere. The poor 400 Germans, mostly Rhinelanders and Wurtemburgers, enticed here by an emigration agent of the name of Ries between 1839 and the beginning of 1841, had the best will to work, but almost all succumbed to the awful climatic influences. Notwithstanding that the larger number of them laboured practically speaking only in the shaded coffee fields, yellow fever broke out amongst them within a few months of landing, when it claimed many a victim, and finally—particularly in the second and third year after arrival—raged amongst them to such a degree that it pretty well snatched away the remainder. It is not to be denied that although the majority of them drew this terrible epidemic upon themselves through the unrestricted taste for strong drink, particularly rum, of which they obtained as much as they liked on the estates, there were nevertheless others who kept themselves completely free from this vice. On my departure from Demerara in June 1844 some 20 of the Germans were still left. The 10,000 immigrant Portuguese died to just the same extent and at the time of my departure had dwindled in a very short period down to 3,000. Intemperance in the use of spirituous liquors had far away less to do with this terrible mortality of the Portuguese than their filth and sordid avarice that induced them to buy up provisions which even a negro would not have eaten.

93. The Portuguese of Guiana are the Jews of Europe. With the same perseverance, the same calculating craft and guile, after making a point of discovering the little weaknesses of every seller, they will wheedle him, and soon close the bargain to their advantage. If this trick fails and the vendor kicks them out of the front, the back door finally opens the way to the end in view. Dealing honestly by means like these in numbers of articles old and new, they hurry off to the more remote estates whence it is not long before they are back to the city with double and three times the amount of money originally paid, to commence their haggling afresh, until they finally acquire a capital of from 4-600 dollars when they return to Madeira.

94. Only an Egoist without a conscience and without a character can ask the German or European workman in general to emigrate to this portion of South America. Everybody who lets himself be inveigled will fall an irretrievable victim to those diseases which the European rarely

---

* Dr. Carlos Finlay, of Havana, first promulgated the theory of the propagation of yellow Fever by the mosquito before the Royal Academy in that city in 1881, while the experiments of Reed, Carroll, Agramonte and Lazear, of the American Board, thoroughly and finally implicated *Stegomyia fasciata* as the agent of its transmission in 1900. Now, twenty years later, *Steyomgia fasciata* is as ubiquitous among us as ever it was, and our freedom from Yellow Fever is not to be attributed to the activity of our Sanitary Authorities. A plausible theory was suggested in one of the numbers of the *Annals of Tropical Medicine and Parasitology* for 1919, by an American Surgeon General, to which reference may be made. It is certainly unfair to lay so much emphasis on the taste for strong drink as a factor in the mortality from this disease; this taste has undergone no atrophy in the intervening years (F.G.R.)

withstands and will never escape so long as he has to earn his bread as a labourer under the scorching sun in the plantation fields.*

95. England's grand achievement that restored to millions the human rights of which they had been robbed, has at any rate proved a grievous blow to all West Indian Colonies because it undermined the basis upon which they had been founded and had flourished. Life must bud afresh from a healthier germ for the growth of which Guiana again, to a large extent, bears all the favourable conditions. South America has as yet had no history of its own but there is a very rich harvest gathering toward its development as soon as all the contradictions with which its political expansion is still burdening her, can be overcome.

96. The extraordinary decline in profit and income that took place throughout all the Estates immediately after emancipation is shewn in the accompanying 12-year review, based on the official data with which I was most readily furnished on making application for them. The total amount of annual income is estimated by the total customs duties levied on similar quantities of the staple products mentioned:—

TOTAL OF ALL ESTATES' INCOMES FOR THE YEARS 1831 TO 1843.

Year.	Sugar in Dutch lbs†	Rum in Gallons.	Molasses in Gallons.	Coffee in Dutch lbs.‡	Cotton in Dutch lbs.	Estimated value of whole in Dollars.	From sale Plantains and Cattle and other Agricul. produce in Dollars.	Total income in so far as it is determined by customs duties in Dollars.
1831	97,050,196	4,261,864	3,140,149	2,825,070	834,123	4,501,297	318,403	1,827,083
1832	96,381,959	2,820,594	4,502,473	6,410,535	1,157,709	7,659,267	293,134	1,442,750
1833	99,106,827	2,516,138	5,121,301	4,490,596	954,957	7,693,108	258,789	1,326,166
1834	81,085,483	2,631,630	3,288,586	3,035,556	926,944	6,035,556	...	1,343,666
1835	107,586,405	3,743,687	3,105,421	3,065,742	867,942	8,467,371	252,758	1,279,417
1836	107,806,249	2,980,296	4,035,569	4,275,732	656,902	10,231,639	245,233	1,459,833
1837	99,851,195	1,975,260	3,405,906	4,066,200	803,200	9,076,234	355,306	1,397,066
1838§	88,664,885	2,086,052	3,132,675	3,143,543	614,920	7,212,274	254,669	2,425,958
1839	60,061,240	2,328,566	1,349,012	3,008,978	285,942	6,586,776	398,580	2,815,876
1840	62,031,921	2,102,378	1,801,742	1,693,309	60,490	8,098,771	344,377	2,525,598
1841	52,043,897	1,543,652	1,584,806	1,214,010	19,200	4,583,370	361,450	2,058,878
1842	54,674,009	1,470,830	2,020.354	1,924,218	3,008			

§ = Emancipation of the Slaves.
† = 100 lbs. Dutch = 110 English (or 105.8 Leipzig pounds avoirdupois.)
‡ = Exclusive of the remaining agricultural income.

---

* Europeans have lived for generations in Barbados, for example, without mental or physical degeneration. Probably, if Malaria chiefly, but also the other preventable diseases, were eliminated, this Colony would be found to be almost as wholesome a place for the European as his native home. (F.G.R.)

97. According to the Census of 5th October 1841 the whole population of British Guiana consists of

Creoles, born in British Guiana	65,252
Creoles, immigrant from West Indies	9,899
Africans	15,796
Portuguese from Madeira	2,219
English, Irish and Scotch	2,162
French, Dutch and German	445
Coolies (Asiatic)	343
North Americans	159
Native Country not mentioned	1,320
Total	97,595

Up to 15th October 1841, the following immigrants were yet landed:—

From the West India Islands	2,285
From Madeira	3,066
From Africa	713
Total	6,064

From January 1842 up to January 1843:—

From Madeira	1,663
From the West India Islands	966
From Africa	2,218
Total,	4,847

Including the total number of immigrants from the years 1835 to 1843, it will be seen that in this interval there landed in Guiana:—

Portuguese from Madeira	10,458
Inhabitants of the West Indian Islands	6,566
Freed Slaves and Emigrants from Africa	4,610
Coolies from Asia	560
Germans and Maltese	400
Native country not mentioned, who came partly from over the West Indies Islands, and from captured slave ships, and took work	8,397
Total	30,981

Consequently on the 1st January 1843 the total population of British Guiana, exclusive of aboriginal Indians, amounted to 120,000 souls, of which 23,000 alone fall to the share of Georgetown, the capital.

98. After these short prefatory remarks on the general history and statistics, I turn to the capital itself. Georgetown, or Stabroek during the Dutch supremacy, is situate in 6°49′20″ lat. N. and 58°11′30″ long. W. on the eastern or right bank of the Demerara River—not on the western

bank as Codazzi mistakenly places it in his so important atlas of Colombia,—and numbers 23,000 inhabitants of whom not less than 19,000 are Mulattoes and Negroes. The white population consists for the most part of English, because but very few of the Dutch who were formerly settled here prolonged their stay when the Colony was ceded to Great Britain. The negroes on the other hand constitute by far the larger number of inhabitants, and except for Water Street which runs directly along the bank of the Demerara and is only occupied by merchants whose storehouses and wharves reach into the River, there is not a single thoroughfare that is exclusively inhabited by Europeans. From the way that it has been laid out, the city at first sight shows the regular straightgoing Dutchman, because all the older buildings are in alignment, so that the streets collectively cross at right angles. The latter are generally wide and divided down their centre by canals which communicate with one another and with the River: the two sides of each street thus separated are joined up with a number of bridges. Owing to the extraordinary moisture of the atmosphere, and also on account of the situation of the city being on the immediate coast-line and alluvial soil, the two-to-three-storeyed houses are almost always raised from off the ground by 3 to 4-ft. high hard-wood posts; they are lined up to the roof with strong boards, and covered with shingles of the same material, the whole being painted in darker or lighter oil colour according to the owner's taste. Pretty gardens surround the natty structures, ornamented as they are with verandahs and porticoes, and so lend a most pleasing exterior to the streets which are always being kept sweet and clean by the so-called Town Gang, a kind of Sanitary Police. Amongst the sanitary regulations is one prohibiting any pig being seen on the streets, when it is outlawed, like dogs without the licence-token in our larger cities, and becomes a welcome spoil for the Gang. As soon as the negro children, scuffling about in front of the door, see the well-known brigands making their appearance at the farther end of the street, they will rush into the house and warn the mother of her prospective loss: and yet almost daily the stiffest skirmishes continue to take place between the owners and the "souvenir"-seeking Health Officers, which often give rise to the most laughable and ridiculous scenes. If the owner succeeds in dragging the squeaking and grunting beast out of the hands of the merciless officers over his threshold he saves it and is not punished. Unfortunately, such a squabble at which hundreds of other negroes will collect out of the sincerest sympathy without daring to lend an active hand under pain of severe punishment, mostly ends to the detriment of the unfortunate bone of contention, because the Town Gang carry large cutlasses with which, directly the victory threatens to incline to the owner's side, they will chop the pig's legs or otherwise hinder its escape. I have been eye-witness at scenes that not alone were worth the brush of a Breughel twice or thrice over, but also afforded demonstration of the hardness, bordering on the truly marvellous, of a negro skull.

99. Quite close to the mouth of the Demerara lies Fort William Frederick, built of mud and fascines. Although it is of course extremely weak and could only withstand the fire of an advancing flotilla for a short while, the landing of one might nevertheless turn out to be difficult, because not only the Fort but the whole coast-line in general finds its

strongest and most powerful defence in its approaches—the marshy bottom of the shallow water together with the ebb and flow. The garrison consists of a detachment of Artillery under the command of a Major.

100. Near the Fort rises the Lighthouse tower, east of which the beautiful but unoccupied Camp House, the residence of former Governors, who in those days were also the Troop-commanders, peeps clandestinely through the thick foliage of giant trees: the lovely, large and roomy Eve Leary Barracks are attached to it, and the two Military Hospitals border the immense parade ground. The barracks could boldly measure swords with all the institutions of that nature that I have had the opportunity of seeing at home and abroad, and be certain of victory besides. The soldiers sleep on mattresses in large airy quarters. Each of the hospitals with their clean and neat kitchens, and their beautiful tanks, is estimated for several hundred patients. As regards cleanliness and careful attention, the military lazarets are particularly distinguishable from the Colonial Hospital: the sick are even divided off into different wards according to their complaints. The light construction of these buildings specially possesses this great advantage, that what with the sultry and oppressive temperature, it admits of a continual change of air which is still further very greatly maintained by suitable ventilation. A shady alley-way of thickly-leaved trees and slender palms leads to the blessed God's acre for the officers, the soldiers' cemetery being on the farther side of the Barracks. The whole garrison of Guiana at the time of my stay, in addition to the artillery mentioned, was made up of the 52nd regiment of the Line, and a few companies of the first West India Regiment.

101. Whatever respect everybody must have for the oft-tried valour of the last mentioned Regiment which was especially demonstrated in the negro uprising of 1824 when folks fought their own countrymen, it is nevertheless to be admitted that I could hardly refrain from laughing when for the first time I saw filing past me these black figures in red uniforms with their mis-shapen extremities stuck into white pantaloons. The officers are Englishmen. England possesses in the West Indian colonies two such African regiments which at the present time are specially recruited from captured slave-ships. When one of these runs into a Colonial port, a recruiting officer goes on board and looks out for the fittest people for military service. Every one is of course willing to join the Colours.

102. Though these young men of Mars in red uniforms and white pantaloons, with their black fists, black features and curly woolly hair, are already funny enough to look at, their faces nevertheless present an appearance something truly awful owing to the different tribal marks or Totems which in earliest youth are burnt or cut into their forehead, temples, cheek, mouth, and additionally, in other cases, to the filing of the incisor teeth to a point. The larger number come from the Coromantyn, and are recognised by the three or four long cuts on each cheek; the others are Congo-negroes, natives of Mozambique and Sierra Leone. Attached to the military forces proper is an Officer of Engineers who has to superintend the Royal buildings, and lives close to the Barracks.

103. In the Stabroek portion of the present city of Georgetown that has still retained its name from former times, and close to the river,

stands the Public Buildings, which includes all the Official Departments. Its purity of style shows that architects are likewise to be found in Georgetown who have kept free from the mixture so affected at the present day. The huge imposing structure which is detached, is built of brick and ornamented with ample but simple stucco, at an expenditure of under £50,000. All public executions take place on the splendid, large, open space in front of its chief façade.* Alongside are the Main Guard and the pleasant Scotch Church: somewhat farther away is the Cathedral of the Episcopal Church, likewise of brick, which cost about £26,000. Christ Church, not less imposing, was built by a company of shareholders. The Church of the Catholic community, several years ago, when Guiana was enlarged to an apostolic vicariate under the titular bishop of Oriense with five priests, was raised to a Cathedral. Besides the church buildings mentioned, there are eight Chapels under the charge of Wesleyans, Baptists, the London Missionary Society, and Mico Charities. It is surprising that only an exceptionally few negroes pass over to the State Church, most of them joining Catholicism and the different church communities, particularly the Baptists.

104. I have already spoken of the new Colonial Hospital and need only add, that as regards construction, it can be held up as a model for the tropics. The whole is intended for 300 patients. Not far off is to be seen the Hospital for Sick Seamen, with the Madhouse closely annexed. Five-sixths of the latter's occupants are negroes.

105. Yellow fever stands at the head of the diseases prevailing in Georgetown and its immediate environs as well as generally the whole coast-line: following it are intermittent and acute fevers, the oft-times very dangerous dysentery, diarrhoea and dropsy. Pthisis, like the different forms of consumption in general is unknown on the coast, and people so afflicted coming here from Europe or North America have found complete recovery. Syphilis in all its varying stages is found particularly among the mulattoes and negroes, though it is far from being so destructive in its effects as in colder climates: amongst the Indians of the interior it is quite unknown. Almost without exception diseases run an uncommonly quick course, so that Health and Sickness border on a marginal limit that is hardly ever experienced in colder zones. In perfect possession of all one's strength and energies, one has no guarantee that he may not be robbed of them within the next hour: on the other hand there appears to be a markedly increased vitality in the transition from serious sickness, absolute exhaustion and weakness, to the restoration of complete health—the convalescence is just as rapid as the onset.†

---

* The Demerara Ice House Hotel is now situate practically in the centre of this space. (J.R.)

† If we omit Yellow Fever, this is almost a faithful picture of present-day conditions The observation with regard to the remarkably favourable influence exerted in Tuberculous disease in those who have contracted it in Europe or N. America by residence in this Colony is amply borne out by the writers' own experience. The conspicuous absence of glandular and bone-infection in children, the universal prevalence of the pulmonary type, the remarkable constancy of a family history of the disease, the very rapid course in the negro in this Colony are all evidence in favour of its recent introduction and probably spread by the direct agency of infected secretions. The observation with regard to Syphilis is a remarkably accurate one. Tertiary Syphilis is comparatively rare in the post mortem room, while Locomotor Ataxia and General Paralysis are far less common in the negro and mulatto than in the European in Europe, (F.G.R.)

106. Amongst the buildings that ought to satisfy a spirit in search of amusement, both Theatres take first place. The first was built in 1828 by subscription amongst several Dutchmen fond of the stage, for amateur theatricals, a hobby that nevertheless soon got so absolutely tired of being ridden, that the building would remain quite empty were not a concert to fill its spacious flooring occasionally. The second was established as a private speculation whither North America incites its Thalian youth to cross the expanse of ocean in order to fan again, or continue aflame the taste for Dramatic Art now dead or dying in British Guiana.

107. Two Turf-Club meetings—for where could Englishmen exist without them?—which usually take place at the beginning and middle of the year, were days of diversion and enjoyment not only for the fashionable world, because they always finished up with Balls, but also for the other classes of Georgetown residents. The heyday however of these pleasures was already past, because in the spring of 1844 the Club was closed.

108. Every other day there appeared for a time three local sheets, the Royal Gazette, as Government newspaper, the Guiana Times and the Guiana Herald. The life of the last one was but short—it went almost as quickly as it came.

109. Scientific Institutions have been attempted it is true from time to time, but they either perished while yet in infancy or, respited awhile under miserable circumstances, died at last from internal consumption—a cause of mortality otherwise quite unknown in Guiana. I might almost doubt whether one dare cast a more propitious horoscope for the three new Societies founded in 1844, the Agricultural Union,* the Astronomical, and the Botanical Society, because the Colonists collectively show too little interest in scientific aspirations, this being completely absorbed by the racing and chasing after commercial and practical pursuits.

110. Two Financial Institutions, a branch of the West Indian Colonial Bank, and a local one, the British Guiana Bank, adjust money transactions. The latter† is founded on shares, of which 6,000 issued at £50 each are all in the hands of the Colonists: in 1830, 50 per cent. had already been paid on them. The report for 1840 shows a favourable state of affairs: the profit on the original capital paid into it amounted to more than 11½ per cent., of which however, only 4 per cent. was divided half-yearly, the surplus being placed to the Reserve Fund.

111. A Savings Bank was established a few years ago, and under the supervision of Governor and Executive, has already, in the short course of its existence, shewn excellent results.

112. The current coins of the Colony consist almost only of Spanish whole, half, and quarter dollars. The Spanish dollar amounts to three guilders colonial money, which is divided into 3, 2, 1, ½, ¼, and ⅛ guilder-pieces, and, for purposes of reckoning—no actual coinage—it is divided into 100 cents, or 4 shillings and twopence. According to our German money, the Spanish dollar is worth 1 thaler 10 silver groschen. Local gold or copper money is not in circulation. The current paper money in 1832 amounted to 2,199,758 Guilders, but is at present almost redeem-

---

* The present Royal Agricultural and Commercial Society.—(J.R.)

† Now absorbed in the Royal Bank of Canada. (Ed,)

ed by proceeds from the land-tax and land-sales. As regards weights and measures, English ones are taken as the standard, though the Dutch is still far more used in the former case: the latter's hundredweight differs from the English by 10 lbs., 110 lbs. Dutch equalling 100 lbs. English. The whole receipts and expenditure for the Demerara, Essequibo and Berbice Districts from 1st January to 31st December 1842 amounted to:—Receipts 965,621 dollars 71⅓ cents, Expenditure 965,621 dollars 71⅓ cents. The credit balance of the Colonial Treasury on 1st January 1843 amounted to 103,749 dollars 91 cents.

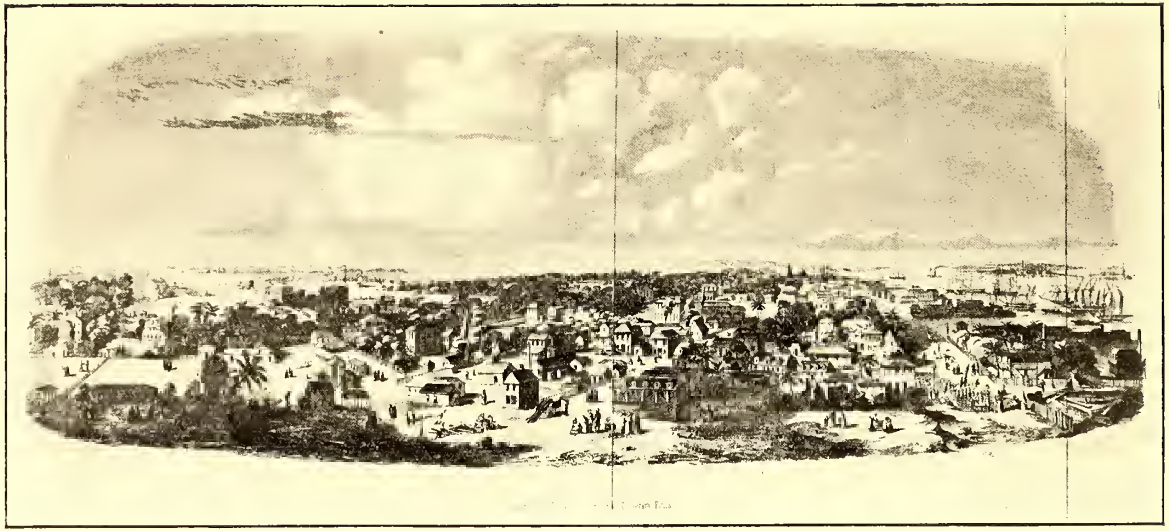
113. The recently built Market-place situate in the neighbourhood of the new Town Hall forms a highly interesting and lively picture, and as regards elegance of surroundings could undoubtedly be surpassed by but few European ones. The whole place is bordered by the finest shops up to which the clean and spotless butchers' stalls extend: these again lead to the large slaughter-houses built over the river where all cattle have to be killed and cleaned, only after which can they be brought in to the stalls.* All dirt and useless remains immediately fall into the stream running along below where they are straightway caught in the greedy jaws of countless sharks and other carnivorous fish or else carried away with the falling tide. The number of these voracious monsters in the neighbourhood of the slaughter-house is inconceivable and God help him who accidentally or imprudently slips into the water. In the case of a negro who during my stay fell into the water one only found a few gnawed bones when the tide fell not half an hour later.

114. But however plentifully the market is supplied with meat and poultry, they both command an unusually high figure, for the reason that, in the former case, unless sold on the same day as slaughtered the meat turns bad, and in the latter because poultry-farming is no longer fostered to the extent it used to be previous to Emancipation when the slaves specially carried it on as a side business, although even now the main trade in fruit, ducks, fowls, turkeys and guinea-fowl is in the hands of the negroes. A large number of geese and turkey are in the meantime imported from North America. The usual prices of meat and bread per pound are:—beef 25 cents, ham 45 cents, pork 22 cents, and bread 11 cents. Fish and poultry are still dearer in comparison. Although the rivers of Guiana harbour the most valuable and tasty fish, it is yet impossible to bring them down from the interior into the city in a fresh condition, because owing to the damp warm atmosphere they hardly remain eatable beyond a few hours: Georgetown has therefore to rest content with those caught in its immediate vicinity. North America almost always supplies butter and such like, for which the ice-ships offer the grandest opportunity. Fresh butter prepared in the Colony is one of the greatest luxuries: the cows supply so little milk that butter manufacture can only be thought of on the largest estates and farms.

115. It is unnecessary to state that the poor people can rarely provide themselves with fresh meat. Their main food accordingly consists of imported salt meat, for even the local meat salted immediately after slaughtering is quite spoilt in a few days owing to meteorological conditions, and so-called salt-fish, a sort of stock material that is

---

* In 1920 one would have to search far and wide for the spotless butcher's stall! (F.G.R.)



VIEW OF GEORGETOWN, FROM THE LIGHTHOUSE TOWER.

brought onto the market from Newfoundland. A piece of such salt-fish and a few roasted or boiled plantains form the ordinary fare of a negro or poor mulatto.

116. The lively and interesting picture presented in the Meat and Fish Market is repeated in a far better frame in the Fruit and Vegetable one which is infinitely better supplied, for here the most varied kinds of produce of the Tropical, mix with those of the Northern, clime, e.g. cucumber, beans and spinach. Salad, cabbage and cauliflower are only used as so-called lettuce, since the first and second do not form a head and the last does not produce a flower. Onions succumb to the same wanton overgrowth, which also leads only to rank leaves: they are therefore imported in whole ship-loads from Madeira, and yet these are far behind those of Europe in pungency, for they can be enjoyed raw, absolutely without tears. Our early green peas find their representative in the pods of the *Cayanus indicus* Spr. known under the name of "Pigeon Peas," which at all events surpass those of ours in delicacy of taste. Vegetables just as much relished are supplied by the young green seed-vessels of *Hibiscus esculentus* Linn. and the leaves of *Phytolacca decandra* Linn. and *Cleome pentaphylla* that are used as spinach. Very favourite dishes are the roots and young leaves of the *Colocasia esculenta* Schott and the tasty "cabbage-palm" which the beautiful *Oreodoxa*, *Areca oleracea* Mart. and *Euterpe oleracea* Mart. supply. Naturally, quite a moderate portion of the last dish costs the slim palm its life which has to be sacrificed to obtain the edible portion: this consists of a compact cylindrical body in between where the fronds separate from the trunk, and when properly prepared is nowise inferior to the finest European vegetable and resembles our asparagus in flavour. There are still to be mentioned the roots of the "Arrow-root" (*Maranta indica* Rose and *M. ramosissima* Wall.), the different species of *Capsicum*, and *Zingiber officinale* Rose., the huge calabashes, the large maize-cobs and cassava roots, in addition to huge stacks of coco-nut, so celebrated for its milk which however seemed to me so insipid that I thought I was drinking nauseously sweet whey. Yams (*Dioscorea alata* and *D. sativa* Linn.), Potatoes (*Convolvolus Batatas* Linn.), "sweet" Cassava roots (*Janipha Loefflingii* Humb. Bonp., a non-poisonous species closely allied to *Janipha Manihot*) which are eaten roasted, overloaded bunches of Plantain (*Musa paradisiaca* Linn.) and the Bread-Fruit (*Artocarpus incisa* and *A. integrifolia* Linn.) constitute, when piled up in big heaps, the most motley mixture. As the "Irish" potato, in spite of every attempt, does not thrive on account of the climate in conjunction with hard and vigorous soil but only gives a 4 to 5 foot high legume, the last mentioned fruits and roots might be regarded as its representatives. In addition to these there still come no end of differently shaped, coloured, and fragrant tropical fruits, tempting Pine-apples and juicy Oranges of all varieties, fruits of the Sapodilla* (*Achras sapota* Linn.), Mango (*Mangifera indica* Linn.), Passion fruit (*Passiflora edulis*, *P. quadrangularis*, *P. laurisea gratissima* Gaert.), the *Grias cauliflora* Linn., Guava (*Psidium pyriferum* and *P. pomiferum* Linn.). Soursop (*Anona muricata* Linn.) the juice of which provides the loveliest lemonade, Custard Apple (*Anona*

---

* Not in the text. They are the present-day vernacular terms. (Ed.)

squamosa Linn.) with which one believes he is enjoying rich cream and cinnamon, the *Chrysophullum Cainito* Linn., Paw-paw (*Carica Papaya* Linn.), Passion fruit (*Passiflora edulis, P. quadrangularis, P. laurifolia* Linn., all three known under the name of Simitu and Granadilla), the *Myrtus Jambos* Humb. Bonp., Banana (*Musa sapientum* Linn.), *Melicocca bijuga* Linn., and many others, under whatever name they go by. And along with all the squabbling, the pushing, and the yelling of the negro women,the racing and the chasing of the busy buyers, fresh columns of negro and mulatto in all shades of colour with filled baskets on their heads were continually pressing their way in from the river-side, striving to avoid coming too late with their loads. Fix all this together in a frame, so that the prettily-coloured animated yet unfamiliar picture can be surveyed at a glance, and then you will understand why, almost every morning I strolled about in the midst of this moving mass of humanity. But while the eye caught sight of the fruits of Africa and the Eastern Indies, it searched in vain for those of Europe: not even a full bunch of grapes was to be seen. It is true that many attempts have been made to transplant grapes from Madeira, from the Cape, and from the Rhine, but as with Prophet Isaiah's cousin, only sour ones were reaped. The same thing happens with apple, pear, peach, and apricot trees, which grow to a huge size, but rarely blossom, and never bear fruit. I have seen just as little of figs, strawberries, red currants, gooseberries, and raspberries. The dried fodder for horses and mules is also imported from North America and England, because the fodder-grasses of this place are not in any sense adapted for hay: the European varieties of corn likewise do not thrive on the fatty soil and hot climate.

117. If we turn now from the Market to individual streets we find here numbers of shops offering for sale everything that a European accustomed to luxury and high living can possibly wish for, because all parts of the world vie in sending to Guiana what it lacks. North America furnishes flour, potatoes, salt fish, salted and smoked beef, and pork, peas, biscuits, cheese, butter, herrings, horses, pigs, ducks, etc., rice, onions, dried apples and pears, leather, furniture, iron-ware, and the chief article of import, ice, which has become a most valuable staple product, especially in Massachusetts whence it is exported to Bombay, Canton, Madras, Calcutta, Mauritius, and the whole West Indian group of Islands as far as Guiana. In Boston alone there are at present 16 companies which ship ice to the East and West Indies, to New Orleans and other southern ports. By means of a machine, the ice is sawn into quadrangular blocks, at least 12 inches thick, and packed on board the vessel with straw and hay in thin air-tight wooden boxes. These ice-ships are utilised at the same time for the transport of fresh meat, butter, etc. England on the other hand supplies Guiana with its manufactured articles, linen and cotton fabrics, silk-stuffs, jewellery goods, sails, towels, soaps, tar, bricks, and tiles: in addition to these, with iron-, glass-, and china-ware, musical instruments, paper, gunpowder, lead, copper, tin and zinc, silver-, and gold-ware, medicines, distilled waters and a number of delicacies in hermetically sealed tins, beer and porter in bottles and barrels. France, Spain, and Portugal send wine *e.g.* champagne, bordeaux, burgundy, madeira, claret and sherry, while Father Rhine even despatches his precious grape juice to the tables of the wealthier Colonists

where it naturally becomes quite a different drink, for during the course of the journey it not only loses its aroma but also its colour.

118. In contrast with this huge quantity of Imports, Export is limited solely to sugar, coffee, rum, syrup and an inconsiderable amount of cacao. The former very extensive export of cotton has sunk to *nil* since Emancipation, because the material obtained by free men cannot compete with that won by slave labour. Were the conditions of Guiana to stand on the same footing with those of the Slave-States of America as regards amount and cheapness of labour, an area of cultivation would then present itself right here along a stretch of some 280 miles of coast-line—from the mouth of the Corentyn to that of the Orinoco—where all kinds of cotton shrub could be grown with the most magnificent results.

119. But in spite of goods and manufactured products being for the most part imported from Europe and North America, there is no lack whatever of mechanics and artificers: these are almost generally Europeans though the mulattoes who particularly show plenty of skill and adroitness in these branches, frequently get the better of them at present. As regards trades demanding greater handiness and manual dexterity the negroes develop far less talent: they work mostly as masons, carpenters, smiths, and coopers, yet without being able to achieve—so far as durability and neatness of work are concerned—what one might reasonably demand in view of their enormous charges. The tailoring and shoemaking trades are generally found in the hands of the mulattoes and the French, who have drawn here from their settlements in the Islands. The journeyman tailor also in Guiana can always be picked out amongst thousands by his clothes: he is likewise the coxcomb, the faultless fop.

120. In connection with sanitary police, it is indeed a wicked shame that everybody may trade in physic as he pleases, the result of which is that the saddest accidents unfortunately often take place. Such an one happened a few days after our arrival when a woman asked for quinine for her sick children and received strychnine: the little ones naturally died under the most ghastly sufferings.

121. The Governor and Government Executive manage the civic administration on the lines followed at the time when the Colony was taken over on the part of Great Britain. The highest Executive or Colonial Parliament consists of the Governor, the Chief Justice, the Solicitor General, the Royal Tax-gatherer, the Government State-Secretary and an equal number of unpaid individuals who are chosen from among the Colonists by the College of Electors.

122. The College of Electors is composed of seven members appointed from among the inhabitants for life: the Government Secretary keeps the votes sent him, and the sealed canister in which they are contained may only be opened in the presence of the Governor and of at least two other members of the Government. Formerly the owners of 25 slaves could only be voters: at the present time any one who pays £5 in customs duty has the right to vote.

123. When a vacancy occurs, the College of Electors names two candidates from whom the Government appoints one as the member and publishes his name in the Gazette. The unpaid or Colonial members of the Legislature serve three years and retire in rotation. One or more annually give up their seats, but can be re-elected. The Governor, as

President of the Administration, has a casting vote, every remaining member, one vote. Independently of this right of vote, the Governor, at every meeting, can exercise absolute veto over statutes and ordinances, though the same may have been passed by a majority of votes, and no ordinance has the force of law before it is ratified by him. The Queen can confirm or disallow every statute.

124. The College of Financial Representatives which represents the people with regard to Finance, consists of six members who, like those of the Electors, are appointed from among the inhabitants for two years.

125 The Government decides in all money arrangements: as soon as the Budget is sketched for the current year, the nature of the taxes and other duties discussed and passed by a majority of votes, the estimates are handed over to the Financial Representatives who, in conjunction with the Government, still submit certain particular points to examination. During this discussion every person, member of the Government or Financial Representative, has an equal vote. As soon as the proposed Ways and Means are approved and passed, they have the force of law.

126. The Supreme Civil Court of Justice in British Guiana consists of a Chief Justice, two Judges, a Secretary to the Chief Justice, a Registrar and a Book-keeper bound-by-oath. All civil complaints and cases of debt are in the first instance brought by the so-called Chancellery before one of the judges who reports his opinion to the assembled tribunal which then confirms or disallows this judicial decision. If the plaint concerns a matter of a value more than £500, an appeal from the decision of the Supreme Court is permissible to the Privy Council.

127. The Dutch Statutes, especially the laws, orders and regulations of the States-General must be taken by the Judges as basis for their decisions.

128. The Supreme Criminal Court of Justice consists of the three Judges of the Civil Court and three Assessors whose qualification is accurately defined. The names of all who are to be appointed assessors are placed by the Secretary of the Court in a box, and chosen by ballot: they can however be rejected by the accused. The assessors have equal powers with the judges and these six decide, by a majority of votes, on the guilt or innocence of the accused. The Chief Justice has the casting vote. Sentence must be passed in open Court, and the verdict of each judge and assessor as to guilty or not guilty recorded.

129. The lower Criminal Court in Georgetown is under the control of the Chief Sheriff of British Guiana; in Essequibo and Berbice, under the Sheriffs of these districts. The Sheriff, as President, and three Magistrates constitute a lower criminal court which has the power of dealing with smaller thefts and offences. In certain cases the Sheriff decides alone. Legally speaking, court has to be held three times a month in each district.

130. As a result of the Slave Acts, to settle disputes between masters and servants, definite tribunals were set up under Special Magistrates appointed by the English Government, and are still retained. There are thirteen of these Magistrates and a travelling Officer, all of them backed by a number of constables to uphold them in carrying out the administration of justice.

131. The arrangements for regulating intercourse between the Indian population and the Colony, for protecting the Indians, and advancing their welfare, were formerly entrusted to six Protectors, six Station commanders, and three Assessors. In place of the latter, three Superintendents and six Post-holders nowadays control the rivers and creeks. The present order of things is but of little advantage to the aborigines, and assumes a constabulary character rather than fulfilling the original object in view when the Protectors and Station-commanders were appointed in 1794.[°]

132. The Police in British Guiana consist of an Inspector General and a Secretary, two Sub-Inspectors for the Demerara and Essequibo Districts, and one Sub-Inspector for the Berbice, 15 Sergeants and 105 Constables for Demerara and Essequibo, and 6 Sergeants and 32 Constables for Berbice. In the Demerara and Essequibo are five prisons: *viz.*, Georgetown, Mahaica, Wakenaam, Capoey, and the new Penal Settlement at Mazaruni: in Berbice there are four, *viz.*, in New Amsterdam, in Sts. Clement and Catherine Parish, in St. Michael's, and the fourth in St. Saviour's.[†]

133. Owing to the complete absence of fresh water every house has a tank or cistern for catching rain, but owing to the long-continued drought, it evaporates uncommonly quick. It was on this account that the Government recognised the necessity for bringing fresh water from distant lying rivers, because owing to the extensive lowlands being subject to tidal influences over a considerable area, the coastal streams are as unpalatable as those of the briny ocean itself. To remedy this urgent want and obtain fresh water, Major Staples[*] determined upon boring an artesian well, in the sinking of which an extremely favourable opportunity presented itself of learning the particular stratigraphical conditions down to a considerable depth, along this immense stretch of alluvial coastline.

134. Clear water though still strongly impregnated with iron first showed itself at a depth of 140 feet. The following geognostic results were obtained as far as this point. Twelve feet below the surface, the borer struck a bed of half-charred *Curida* and *Rhizophora* trees which at a depth of 40 feet was followed by a bed of blue loam about 50 feet thick that again overlay a second belt of timber about 1½ feet deep. Immediately below this a 9 feet thick bed of compact grey-white clay was pierced, which somewhat deeper down was mixed with plenty of sand and appeared violet-coloured, and then followed a yellow-tinted one.

135. This favourable result induced several farmers, particularly on the West Coast, where they had suffered most from water famine on account of continued drought, to repeat the attempt on their own properties. To show how dependent the live stock on the coast is upon weath-

---

[°] The present law for the better protection of the Aboriginal Indians (Ord. 28 of 1910) was based on the experience gained by the Translator in framing the Queensland and West Australian statutes. (Ed.)

[†] See "Geographisch—statistische Beschreibung von Britisch Guiana etc." By R. H. Schomburgk.

[*] There is authority for the correct spelling of this name either as Staple or Staples. For the benefit of his Teutonic readers, Schomburgk writes it Stapel: in the course of the text it will be noticed that certain other patronymics have been slightly altered for similar reasons. (J.R.)

er conditions, the fact may be instanced that upon one farm alone, 500 out of 1,300 head of cattle perished during the long drought of 1831.

136. At the present time 17 artesian wells have been sunk in Georgetown, partly by private enterprise and partly by Government. These give a daily supply of 96,000 gallons of water which has a temperature of 84° Fahr. and is about 5° higher than that of the river-water of a morning.°

TEMPERATURE OF THE ARTESIAN WELL AT PLN. MON REPOS ON THE EAST COAST OF GEORGETOWN.

1844	Time	Temperature of the air.	Temperature of the water of Artesian Well.	Wet Bulb Thermometer.	
		Fahrenheit Thermometer.	Fahrenheit Thermometer		
7th March	9 a.m.	84·2	84.2	78·	Wind E. by N.
	12 noon	89·	84.5	82·5	Sky partly clouded
	3 p.m.	86·5	84·5	79.5	Wind E. by N. Sky partly clouded

137. Although the water, owing to the quantity of iron it contains, is not adapted for drinking purposes it can be nevertheless utilised for all kitchen requirements—except for tea, which cannot be drunk if made with it after a short exposure to the air—and all other purposes in general: cattle swill it indeed more freely than any other water. According to the analyses that have been carried out with absolutely corresponding results it contains a quantity of iron dissolved in carbonic acid, and a small amount of magnesia.

138. During 1835, a year so notorious for the spread of yellow fever, the convalescents at the garrison, under Dr. Bone's orders, had to drink this water of a morning, with marked results.

139. As the water streams out of the bore it is still quite clear, but on escape of the gas, the released iron forms on its surface a pellicle which then becomes deposited at the bottom: on filtration now, it retains its pure colour. If the water be filtered before complete escape of the gas, the process is continued later, the sediment forming in the kitchen and other wares.

140. A peculiar phenomenon in some of the wells appears to be this that the height of the flow strictly depends on the ebb and flow. In some bores the difference during the interval is not less than 18 inches, and when spring tides set in, even 2 to 3 feet. Although many explanations have been attempted, no one has yet fully solved the problem, although there can be no doubt that the increased pressure at flood tide and per-

---

°In the matter of drinking water supply, too, we seem to have retrogressed: we cannot boast of 96,000 gallons of artesian well water daily for the supply of the town. (F.G.R) haps the varying stratigraphical arrangement of particular beds may be paramount causes.

141. The greatest depth to which the bores have been sunk hitherto is 200 feet, without the base of the alluvial strata being pierced. The varied stratigraphical relations also differ from one another according to locality, and only correspond in that, with all of them, the huge layers of rotten wood, even at a depth of 175 feet are always to be found.

142. Let us now glance at the outward form of Religious Life, and the means adopted for its advancement· The only church which the English met with on their occupation in 1803 was that on Fort Island, where the service was subsequently supplied by the army chaplain of the English troops and a preacher from the Dutch Reformed Church.. By 1810 a new edifice was dedicated in Demerara, the capital of the Colony, to be followed in 1819, 1820 and 1825 by three others in Demerara and New Amsterdam, when at the same time the Demerara, Essequibo and Berbice Districts were split into parishes. Up to that period the whole of Guiana did not possess more than three clergy. Public Schools, besides the Saffon Institutes, were quite foreign until, in the interval between 1824 and 1831 the Colony redressed the grievance, and expended £26,000 out of her own resources for the purpose: as a matter of fact, in 1832 the sum for the support and maintenance of Religious Institutions, including the erection of new schools, alone totalled £14,337 exclusive of the amounts spent on the like objects before and after. As a result of these united efforts the Established Church by 1836 had seven rectors and one curate: the Dutch Reformed Church two preachers, the Church of Scotland five, and the Roman Catholics two priests. Besides these clergy the various church communities had another twelve catechists and teachers whose total salaries ran into £10.000. It was only in 1838 that the Colony was raised to an Archdiaconate, in the Diocese of Barbados, and the number of Established Church clergy increased to 18 with 28 teachers and several mistresses, as well as 10 Colonial curates and catechists: in this same year the number of churches, chapels, etc. exclusive of eight private schools already aggregated 47. In 1842 the members of Committee accepted Dr. Austin as their Bishop in the Archdiaconate, the Roman Catholics having been organized already under Vicar-Apostolic Clancy, Bishop of Oriense in Partibus with, at present, five priests and several schoolteachers. At the same time Georgetown was dignified a City.

143. To these Ecclesiastical Institutions must still be added the brisk activities of the Wesleyan Methodist Missionary Society with its eight chapels, the London Missionary Society, the Baptists, and others whose labours amongst the free negroes since 1838 have been crowned with the greatest success.

144· As my brother had become acquainted on his previous visit with the nicest families in the city, the inner social life of the Colonists was disclosed earlier and easier than might otherwise have proved to be the case with me. But what I had left behind in the old world I found again in the new—in many respects even more crude, indeed in certain cases, essentially more revolting. The Europeans constitute here, as in all other Colonies, the only aristocracy, and one would almost believe it impossible that a people, to whose high-minded principles the elevation of their hitherto degraded fellow men to the standpoint of a free folk was indeed due, should be ruled by such one-sided and narrow prejudices.

145. In the Governor, Sir Henry Light, I found an extremely loveable and estimable man whose white hair only too plainly showed that many a year had already crossed his path. His wife and family were still living in England, owing to his having taken up the appointment only a short while before. Besides his official position he had at the same time to assume another locally-political one, because in Georgetown the upper classes are divided into two contending camps, on account of which their mutual social intercourse is as impossible as in our smaller German towns. The Governor must always lead the party formed of the officials and certain of the wealthier estate owners, while the planters dissatisfied with the administration, merchants etc. form the recruits for the other: "The Brigade" is the term generally applied to the former.

146. The unlimited hospitality of the West Indies, already a byeword, continues to be so in Georgetown where one finds it particularly in families who pin their faith on plain honest domesticity to which they must ever remain true so long as Fortune does not shower her favours on them as bountifully as she has in the case of others amongst whom the most spendthrift and ostentatious luxury has indeed become the rule. The result to-day is that almost the whole of the so-called English society retains an extraordinarily large amount of ceremonial stiffness and, in its sporadic seclusion, generally something in the way of unnaturalness and affectation.

147. After the novelty had worn off, the soirées, dinners, luncheons etc. began to pall on me, though it was with all the more inward satisfaction that I accepted invitations from the Dutch families, for every visit I paid them made me think I was once more back in my beloved Home. I found amongst them almost everywhere the same honest simplicity, cordiality, and intimacy peculiar to our own social circles. The German feels at home with these Dutch families, the cold dividing barriers drawn by etiquette between the sexes in most English families having taken no root in the Dutch ones: once introduced into the latter, the stranger is forthwith regarded as a member of the family, and unrestricted intercourse reigns between him and all who belong to the smaller or larger coterie.

148. Among the Germans settled here, who all came to pay a visit soon after our arrival, was Mr. Bach, an Oldenburger, from the little town of Jever, the owner of an important coffee-plantation on the Demerara: he won my heart at sight, just as I subsequently learned to esteem him still more on discovering him to be, not alone the only, but also an excellent, botanist. My brother had already told me on the voyage across that one of the most excellent collections of orchids was to be seen in his grounds. Unfortunately a severe sickness with which I was attacked prevented me accepting his invitation to stay with him, for some time to come. Among my other countrymen, mostly mechanics, who had formed a home here was a certain König who, with the impulsiveness of a German bred and born, had anglicized himself and chang-

ed his name to King: from many hints later let fall it was easy to be seen that he must have had a very adventurous past. It seemed that he had served in the Hussar Guards at Potsdam and became non-commissioned officer, but, having got into some scrape or other, had considered it wiser to get away clandestinely and come out to the West Indies where finally, in Demerara, he made an ample living by stuffing birds and mammals: he sold these to the ships' captains and Garrison officers before their return to Europe dearer than what they could have bought them for in England. His acquaintanceship certainly did not contribute to exactly the most pleasant of the recollections which I brought back with me to Europe.

149. Before entering into any further details of my life in Georgetown, let us take a peep into the internal arrangements of the houses of the aristocracy. Like that of their lives their whole get-up exceeds the ordinary bounds of good old English comfort. The chief requirement of a comfortable residence naturally consists in giving ventilation as much scope as possible and assisting it still more in opening all doors and windows: but each window is here supplied with green jalousies which are let down when the glass windows are opened, and so that the lights should burn evenly of an evening, large tastefully cut glass globes are placed over them. On the first floor, the more or less roomy dining-hall generally occupies the middle of the building: next to it are two side rooms. Behind these apartments runs a gallery, on which are to be seen both the steps leading to the next floor as well as a pantry, a small room for keeping the table linen and service as well as the food removed from the table. The kitchens are never in the main building but generally in outhouses: there are no vaults and underground cellars, and likewise no basements. The upper floors are arranged as on the lowest one. Stone houses are generally discounted, because during the rainy season they are usually reckoned damp and unhealthy. Shingle roofs are even preferred to those with tiles, because they supply a much better and healthier water to the cisterns than the latter. The most glorious wooden mosaic covers the walls and flooring of the rooms but unfortunately this is now being greatly supplanted by carpets coming into fashion: to keep this wainscoting and flooring continually clean, both are rubbed weekly with lemon-juice or shaddock (*Pompelnuss*) which not only fulfils its purpose, but considerably cools the air and spreads an extremely pleasant perfume throughout the building.

150. The beds of the sleeping-rooms consist generally of mattresses with a light feather pillow: the great four-poster is surrounded with a thin gauze to keep off the absolutely unbearable mosquitoes at each season. Every adult member of the family has his own bedroom.

151. Five p.m. strikes and everybody with any pretensions at all to culture, position, or outward superiority, hurries off to the Promenade, the Spanish Alameda, the Italian Corso, the one public place where the whole aristocracy is seen united, though divided by political and domestic differences: he who goes on foot would expose evidence of his own poverty, and would accordingly prove 'impossible" in those circles. As a rule, walking is avoided here more than anywhere else and any one enjoying but a fair amount of means keeps his own trap which is very generally a light two-wheeled vehicle called a gig, or at most a

phaeton. Gigs bring officials to their offices, merchants to their warehouses, physicians to their patients, the world both pretty and ugly to the promenade, to "The Ring;"—then it is that the younger and wealthier ladies mounted on their palfreys and surrounded by equestrian knights and knaves, accompany their mother sitting in her gig or phaeton. The Ring, at the same time the public highway, is formed of an avenue of beautiful cabbage-palms (*Oreodoxa oleracea*) which stretches for an hour from the western end of the city along the River.*

152. I know of no tree that is better suited to such a purpose because it diffuses a charm that has in fact something really fairy-like about it. The peculiar rustling of the fronds arising from the breezy atmosphere, the sudden opening of its large flower-bunch, after bursting its capsule with a fairly distinct report and, during its erotic ecstacy, scattering a regular rain of pollen through the air which it fills with delightful perfume,—everything in short combines to make a promenade along such an avenue one of the most enjoyable of pleasures. On the western front of this avenue, and shaded by it, there stretch certain of the planters' residences as well as their boiler-houses and quarters for the staff: the former are enclosed in the most delightful gardens, and divided from the lands of their neighbours by glorious hedges of *Poinciana pulcherrima* Linn., *Hibiscus rosa sinensis* Linn., *Jasminum grandiflorum* or *Gardenia florida* Linn., *Clerodendron inerme* Wall. etc.

153. What are all our pretty rose-bushes compared with this fresh and brilliant mixture of red, yellow, white, and blue? What is the Northern floral fragrance by the side of this perfect perfume? If we turn our gaze from the outer circuits to the inner, the house itself is found to be regularly enveloped with trees of the glorious *Jacaranda rhombifolia* Meyer. and *J. procera* Spr., *Cassia fistula* Linn., with its long dependent pods, *Cassia multijuga* Rich., *Erythrina Corallodendron* and *E. speciosa* Andr., while the golden fruits are to be seen glowing in the dark green foliage of the Orange-trees, and the beautiful *Aeschynomene coccinea* and *A. grandiflora* Linn., with their large butterfly buds, illumining the fairy-like blossoms of *Ixora coccinea* Linn. in between the lovely hedges.

154. On its eastern front the Avenue is directly bordered by the dwellings of the negroes working on the estates: these are intersected by green grass flats where an equally beautiful naturally grown flora comes into prominence. The rich wealth of flower of *Asclepias curassavica* Linn., *Crotalaria glabra* Willd., *Ruellia tuberosa* Linn., *Leonotis nepetaefolia* R. Br., *Stachytarpheta jamaicensis* Vahl. and *Tiaridium indicum* Leh. vie with the enlivening groups of *Lantana Camara* Linn., *Cassia alata* and *C. occidentalis* Linn., *Mimosa*, and *Cordia* until one's view is lost in the sugar-, plantain-, and coffee-fields and in the giant bushes of bambu now and again rising behind the houses, when it finally becomes limited by the dark fringes of the virgin forest. The water trenches running along the Avenue are covered with the beautiful

---

*The avenue is the present Houston Palm Avenue: the Ring—the circular area where the carriages, etc. turned—of which no traces remain, was at the entrance of Agricola Village.—(J.R.)

Eichhornia azurea Kunth., and *Limnocharis Humboldtii* Rich. It is only in this changing and vivid contrast that the landscape succeeds in obtaining that infinitely delightful charm which the Imagination conceives approximately enough under an atmosphere of ice and snow, but which can only germinate into infinitely sublime Reality in the Tropics.

155. The lovely avenue soon fills with mysterious rustle, with floral fragrance,—the sun hurries on towards the horizon and sheds its golden rays once more upon the fashionably got-up dandies speeding along on their proud steeds, or upon ladies dressed in the latest London styles in elegant gigs, bright phaetons or on sprightly mounts. One drives or rides a few times up and down, returns home to dine as the sun sets, and then goes to bed *ad lib.*

156. Among the numerous members of the fair sex I would have awarded the prize for beauty to Miss Ross and to Miss Dalton, had not the whole of Georgetown already done so. But however many the lovely female forms and attractive features, the faded yellowish tint which one generally finds shared equally between the men and women from the lowest to the highest,—although the latter never expose themselves to the rays of the morning or mid-day sun—did not make a very pleasant impression on me. The most blooming European complexion, the indication of a cold climate, disappears without a trace after a three or four months' stay: and with it there also goes that buoyancy, that over-bubbling Love of Life, which in Germany is so often the flower-scattering companion of Beauty.

157. In the families of the upper classes I generally found a high degree of culture, often a combination of the purest womanliness with the richest intellectual gifts: the men, at least the senior portion of them, have mostly retained the characteristic trait of the race to which they or theirs forbears belonged: the younger generation, it is true, almost always shows precocity and extraordinary intellectual talent, but exactly resembles the fruitful tropical soil which, unless carefully tended by the owner's hand, is soon overgrown with weed.

158. The ladies of the higher classes usually spend their time in reading, and now and again, though only to break the tiresome monotony, in light feminine tasks. The kitchen only knows the lady of the house and her daughters by name, and the remaining cares of a housewife are just as much unknown to the former as to the latter. Pleasure, Pleasure, that is the everlasting slogan, the sphere, the summit and shining light of the fashionable world, just as it is that of the poorest negro. On two occasions within a short interval I was afforded the delightful opportunity of gazing on, and wondering at the absolutely genteel and lovely world of Georgetown gathered within a limited area. The first was at the Races, the second at a private Ball got up by the Croesus of the capital. The ball commences at 9 o'clock, and the gentlemen must appear in black clothes.

159. I almost doubt whether Lucullus could have had his table arranged with better regulated refinement. Here were the rarest gifts of Nature from all parts of the world, united in the smallest of spaces: from the Cape to my native Rhine the grape had contributed a supply

which had been previously cooled in big ice-tubs: the other refreshments, dishes etc.—it is no use saying anything further. Like everywhere else the prize for beauty amongst this brilliant assemblage was indisputably taken by three Creole ladies, and I had the good fortune to dance with two of these earthly goddesses. As already mentioned all ladies are heartily fond of dancing, but they are correspondingly bad dancers. The ball was over at 4 o'clock in the morning.

160. It is unnecessary to state that a ball, given in such a relaxing climate, in spite of quadrilles and country-dances only being indulged in, cannot be one of the so-called pleasures for a German: but the pretty and ugly Creoles think otherwise. With white trousers and white jacket, a silk handkerchief negligently slung round his neck, at 11 o'clock in the morning, the time for a morning call, the dandy, the man of the world, the gentleman of *bon ton,* hurries to his swagger lady-friend just as the negro,—one might almost say the European ape,—does in his own sphere of life, and enquires after her health, listens to her heart's desires for the day, or possibly, as one more favoured, takes lunch with her on cold meat, fruits and cakes. Lunch is an interpolated repast between the real breakfast and the chief meal which is only served in the evening: at the latter and at night, everybody must appear in dress coat and black trousers.

161. In European families, English is of course the general language of conversation: not so among the coloured people and negroes, who talk a mixture, one might almost say, a real "pidgin" (*Kauderwälsch*) derived from almost all the idioms of Europe and Africa, the indigenous *so-called "Creole-Dutch": the Dutch language which was brought by the first owners of the Colony constitutes its basis. In the course of the constant changes of ownership, the next-following temporary possessors on each occasion left behind certain traces of their language with the result that, in the course of time, among the coloured people and negroes, many a common expression is seen to be derived from the Dutch, French, English and African occupation, and has now also spread amongst the indigenous coastal tribes.

162. Just like their speech, the coloured population also consists of the most different racial relationships, amongst which one particular degree, in spite of its general name, still has a special designation. By "Creoles" one understands all those who have been born in British Guiana from immigrants, whether both their parents are Europeans, Africans, East Indians, or their mother the one, and father the other: all children born in the Colony are Creole. This definition extends even up to domestic animals, according to which we get Creole horses, Creole cows, Creole pigs, Creole sheep etc.

163. A second general term "Coloured people" comprises all the different gradations arising from the mixture of Europeans with African and Indian women. The race resulting from the mixture of Europeans with negro women is called "Mulatto."

164. Mixtures of Indians and Negroes are very rare, the former generally regarding the latter with supreme contempt, even hating them

---

* This is still in restricted use in the Essequebo, at least, and is known as "Takkey, Takkey." (A. R. F W.)

like hereditary enemies.† This is expressed in the most glaring manner whenever they meet. The appearance of such hybrids differs strikingly from that of the remaining ones. All whom I have had the opportunity of seeing were specially marked by slim vigorous stature and muscular strength. Their colour is a dark copper or coffee-brown and, as regards their facial features, incline much more to the Ethiopian than to the American race. Though the cheek-bones still continue to be strongly prominent, it is nevertheless not so striking as it is among the Indians, where it appears to a much greater degree. The nose is broad, it is true, but not turned up: even so, the lips are still always thick, but not puffy. The most striking thing about them is without doubt the extraordinary hair which as it were does not seem to know in what direction to incline, whether towards the curly wool of Africa or the smooth hair of America, and so stands on end half-curly. A lighter complexion and smooth hair shows at once the mixed descent of Indian and European.

165. The race produced from the mixture of a European and mulatto woman undoubtedly constitutes one of the most beautiful stamps of human being for which in remaining portions of the New World, particularly in North America, are reserved the special terms creole, mestique, and kastize, and in the Spanish possessions, quadroons. While the males of this mixed race appear to advantage amongst all other men, the female sex finds its perfection in Guiana. Their full truly plastic figure is still further improved by natural grace, by real elasticity and sprightliness of movement, by the delicately formed hands and arms, and pretty feet, while the dark brown sparkling eyes, the swarthy glowing complexion, the beautiful ivory-white teeth, and the luxuriant curly black hair lends to the face a charm which is peculiar even to itself alone.

166. The different gradations in the colouring of the mixed breed can be fairly accurately represented in quite a simple manner with a glass of port wine and a glass of water, when one pours the half of each into a third empty glass. This mixture represents the mulatto colour. If one fills with this mixture another glass half-way, and then again pours into it an equal portion of clean water, one has the next generation. After repeating the experiment ten times, every mixture of port-wine colour has entirely disappeared and one has accurately the ten shades of colour from black to white until again pure white.

167. In spite of the fact that in the last mentioned mixed breed (European and Mulatto) the physical gifts mostly keep pace with the intellectual ones, these people nevertheless up to the present belong to the despised class of East Indian pariahs, for whom every entrance into the circles of the pure-blood aristocracy still remains closed.

168. This brutal situation is the cancer that continues to make every social unification impossible, and not alone destroy the social life, but in connection with the political, must lead within the not very distant future, to a state of affairs that threatens to be all the more dangerous

---

† What with the opening-up of the Colony, the gold-mining and balata industries, this i very far from being the case now. (Ed.)

for the motherland in proportion as this class happens to be the more numerous, just as it is, at the same time, and taken as a whole, the better educated and the more intellectually gifted.

169. The bonds of married life are tied more loosely here than they can possibly be in any other Colony. The least wealthy, yet to be sure rich, planters, the merchants, even Government officers, inspectors, estates' managers, and their servants are married, but usually live in concubinage with coloured people, negro or Indian women. Many children born of such unions receive their education in England, yea, even in South Germany. Endowed with the most ample physical and intellectual gifts, son and daughter return home, to their native soil where, upon their first footfall they find themselves condemned, like Pariah and Helot, back to the existence which English national Pride and Slavery, that dark spot in the history of mankind, have devised for them. They say good-bye to Europe but cannot take farewell of all the claims to such a life as that to which they are entitled by their refinement and wealth, because the father at his death frequently bequeaths them all his property. Life in all its bitterness spurns them with frigid callousness, contempt dodges their every step, and scorn is meted out to those who strive to force their way through these cold and inhuman barriers. Deep hatred fills the impassionate heart with disdain for the ideals which European education taught them on the other side of the ocean, and the breast burning for satisfaction soon tears away and casts aside the veil of womanliness. Finery, the grasp at temporary pleasure, and the taste for illicit love are in very great measure the sad consequences of this neglect. If in isolated cases the European disregards these prejudices and still marries a coloured woman upon whose reputation even the most stinging envy can find no stain, the blot of birth indelibly remains: all the aristocratic circles are open to the husband, but to the wife they are impenetrably closed. Thus in the hearts of the coloured people there is developed that passionate hatred which hovers over the Colony like an Avenging Angel more threatening than the one the negroes cherish: for, with the latter the sources are much more superficial.

170. Still more striking however is the reciprocal action which this complete segregation of white society from that of the coloured exercises again upon the different gradations of the latter, and in this social relationship of the Present may perhaps lie the only guarantee that the motherland will retain her hold on the Colony in the Future. The coloured man regards the mulatto and creole negro with the same contempt that the latter looks upon the non-creole negro who comes here as an emigrant or freed slave, although he shares his colour absolutely. In their mouths the word "nigger" is the commonest term of abuse, and woe betide him who offends his falsely-understood feeling of freedom and illimitable arrogance. "I am a free man, have the same rights as you, and know how to defend them," are words to which the most harmless remark, or an apparent disregard for their boundless oft-ridiculous self-confidence gives rise. The contempt shown the negroes by the mulattoes is mutual and often enough have I heard songs, wherein the negroes are so fond of expressing their feelings of hatred or of love, amongst which the following, of which I am only mentioning its gen-

eral tenor, takes chief place:—"The whites have a native country; the blacks also have one, but the mulatto searches for one in vain, he seeks and finds none. Poor is the man, contemptible is the man who has no native country: the mulatto has none."

171. Their mental and physical indolence, in short their collective intellectual powers that stand on a very low level, allow of the negroes being endowed with but a few good qualities, among which their unlimited gratitude shines forth as the most brilliant. Impelled by it, they readily and willingly offer their lives for those to whom they believe they are indebted, though in contrast with this beautiful and chief characteristic, the unbounded thirst for revenge which only too often seeks and finds satisfaction in the most awful sufferings of their victims, is very striking. Not only in connection with his physique but also in regard to disposition a marked difference is shown between the creole negro and the one brought out straight from Africa: the latter is reserved and mischievous, the former ever cheerful, light-hearted and ready for a joke. Physical listlessness and laziness, especially among the women, have already had to make way for a certain elasticity and mobility that lends a particular charm to the black figure when one sees her, with her striking white pearly teeth and sparkling eyes, hurrying through the streets in a white muslin costume. Their figures become ridiculous however when in their apish efforts to clothe themselves in the most absurd European fashions with glaring colours, they make real caricatures of themselves: unfortunately this is the case with nine-tenths of them.

172. With the onset of evening, there sound from every quarter the monotonous notes of drum and tambourine, instruments which passionately excite the indolent muscles of the Africans and their descendants who always dearly love a dance: they will keep it up until break of day. I was often witness of their crude native dances which nevertheless are only danced by immigrants and former slaves: the creole negroes are ashamed of them, and are only happy when indulging in country-dances, quadrilles etc. The native dance as a rule takes place in the open. Only let the ponderous fist strike the drum and holiday-makers and working people will swarm from all sides to the seductive call of the instrument,—if one may call a barrel or hollow tree-trunk covered with cow, bullock, goat or sheep skin by the name of instrument—and a crowd of hundreds is collected in no time. In measured beat and slow, the ladies, draped in white muslin, and adorned with huge red-coral chains, trip it with the men in circles advancing and retiring: the excitement of the musicians, for in most cases the triangle or a violin is yet added to the drum, becomes aroused, and proportionately with it the action of the partners. The blows of the drummer fall ever quicker and harder on the skin which possibly only withstands the treatment by virtue of its being so thick: the dancers are soon transported with wild bacchanalian lust, when what with a series of disgusting jerks, "winds" and contortions they resemble Furies rather than human beings. But this is still too tame for the spectators, the gesticulations and distortions are not sufficiently out-of-the-common. All of a sudden,

three or four fresh performers, no longer able to resist their inner impulses and devilish appetites, spring into the exhausted throng. The music now takes on a swifter turn, the dance waxes more fast and furious, even more demoniacal, and the sybilline spirit that grips them, likewise seizes all the onlookers who, with yelling voices and clapping hands goad the waning strength of both partner and musician to further exertion: finally this frenzy has to succumb to absolute lassitude when, bathed in perspiration, foaming at the mouth and faint with exhaustion, the dancers sink to the ground and fresher people take their places. However interesting in one respect these scenes might be, the odour, so unpleasant to a European, indicative of a single negro at a distance of even five paces nevertheless used to keep me at a respectful distance: at a gathering such as this it amounts to a suffocating atmosphere wherein the whole of Olympus together with the heroes of the Past and Present are disporting themselves in the monotonous din of a delirium of dance. Cicero foots it with Proserpine, Mercury with Cleopatra, Nelson shakes hands with Neptune, Nero falls into the arms of Napoleon, Hamlet jokes with Aurora, while Romulus and Remus, Blucher and Wellington haste with waddling goose-step to join the happy throng, and Mercury shouts to Ombre, Whist, and Spadille, with Venus and Helena telling them to hurry up. These extraordinary names date from before emancipation when it was obligatory on the slave-owners or estates' managers to give names to children born on the plantation, and which were mostly inspired from some reminiscence of the past, or from the particular business on hand when the news of a newly born child happened to be announced.

173. If one turns now to the over-done gaudily decorated ball-room of the Creole negroes, where only quadrilles and country-dances are fancied, the Paradise of Deities and Heroes is re-enacted save that the Gods and Goddesses appear in other costumes. Silk covers their mortal bodies. Minerva foots the light fantastic in crimson spencer and white gown before Mars, who is perspiringly anxious about cutting the latest French capers properly, while Diana, in a sky-blue dress and white spencer, gazes in the eyes of love-lorn Narcissus: she is either brushing away from off her brows the small dishevelled tufts of hair which, woven from her short curly wool and owing to its uncontrollable nature, stands out from her head like horns, or toying with the huge ear-rings that drag her long ears still longer, or perhaps passing enormous links of her heavy gold chain negligently over her fingers; while her ill-shaped feet are stuck in red or white satin shoes.

174. An example of the extent to which the taste for finery is really carried among the creole negroes was afforded us by Captain Rothwell who showed us, on the trip out, a heavy gold chain and ear-rings purchased by him for £15 and £5 respectively to the order of an old immoderately fat negress who kept a huckster's fruit shop.

175. Though the insufferable stench from the company of Gods and Goddesses had driven me out of their presence into the open air, the overpowering perfume contributed by Rose, Jasmine, Orange, and Eau de Cologne in the ballroom almost threatened to stifle me: in spite of

everything, Art had not been quite able to overcome Nature, which gradually commenced to recover her disputed sovereignty.

176. The gentlemen are the faithfully reflected images of the ladies. A black or blue frock-coat covers the faultless shoulders: a red, yellow, or sky-blue vest worked in with gold—this is enclosed with a huge watch-chain and heavy pendant, from which one would in most cases tell the time in vain—covers the powerful chest: the white dancing pumps neatly laced up to the knees: the silk stockings and red or yellow shoes emphasize to advantage the slim build of the extremities. A Master of the Ceremonies, with hat under his left arm, leads the dance and tries to curb the all too lively "Irresistibles." One hardly knows which to consider the more ridiculous, the costume, or the continual turning, bowing and scraping of the man stuck inside it. Our German provincial townsman knows how to offer Mr. Burgomaster his snuff-box really graciously enough: but compared with the elegance of the creole negro, that is only shade as compared with brilliant sunshine, while the skipping around of the Teuton when he happens to reach the door at the same time as Mr. Syndicate or Mr. Senator are only shavings in contrast with Hercules' club. Questions like "How is my lady Aurora today," or "Why is my lady Daphne not here yet?" are to be heard repeated in thousandfold echoes.

177. Nevertheless, this polished exterior of an aped etiquette soon crumbles again into its rightly recalled natural state by the inordinate taste for champagne and other liquor:—boundless brutality replaces the initial polish, and the powerful blows of the equally powerful fist quickly put the whole pack of divinities to rout. This last stage is the ever recurring refrain with all gatherings of negroes, be they creole or not.

178. The weekly evening socials of the Prince Regent Society, the Victoria Society, and Fancy (Mask) Balls of the creole negroes all wind up with bleeding heads, torn dress-clothes, rent garments, and tattered spencers, and the English merchant or officer whose company has been requested with a perfumed card of invitation must haste to reach the doors before the boiling passions exceed all limits.

179. Cock-fighting, that probably has been handed down from the English, together with its associated betting and disorderliness is held by the negroes in even higher estimation than dancing. The limitless licentiousness finally forced the Governor to prohibit these exhibitions under the severest penalties, but nevertheless without being able to suppress them. Just as in Europe gambling has been driven from public resorts into thieves' dens and behind secret doors, so cock-fighting has been forced here into enclosed yards or spacious rooms, but as the pugnacious fury of the birds becomes rapidly supplanted by that of the spectators now thoroughly aroused, it requires no delicate sense of tracking on the part of the police, as in Europe, for the offenders to be discovered: the indiscriminate shouting, together with the hefty thumping blows of the combatants indicate not only within the city, but also outside it in the forest, on the Easter Tuesday, the places where the law is being broken.

180. Easter Tuesday from the remotest times was the special heyday for cock-fights. Since its prohibition the yards and rooms have nowadays become too small. The location in the forest already fixed upon

several weeks before, is secretly notified to the black population. Tuesday appears—the Police scatter themselves in the environs and soon return to Georgetown accompanied by negroes dripping with blood.

181. A good fighting-cock is the most treasured possession of a negro, the object of his tenderest endearment; in fact, a well trained champion that keeps itself hardy and bold, yields its owner but little less than the best race-horse. Indeed, the rage for betting has so greatly increased since the prohibition, that rings are immediately formed on the streets as soon as a fight occurs among the scattered fowls, the favourable opportunity for giving vent to it being gladly seized. Should such a fortunate accident happen on a farm, and there are no other spectators to wager with, the son bets against his father, the father against the mother, and God help him who wants to stop the sport by unseasonable interference.

182. As to the upper classes, for those fond of betting, the Turf Club Meetings were days to be looked forward to and enjoyed. It was then that one could search in vain for a healthy negro throughout the whole city: indeed, the very servants would immediately throw up their situations were the master or mistress to prevent them taking part.

183. The streets fill at daybreak, and dense crowds indicate where bets are already being booked. Rigged out in the most beautiful of the beautiful that his wardrobe comprises, in white trousers, dazzling a long way off, a blue dress coat and glittering vest, with a fuming cigar in one hand and a faultless stick in the other, the negro, full of hope, hastens to the Course. I shall never forget my first Georgetown Race-Meeting with an attendance of at least 10 to 12,000 negroes, whom the whole of the police force was unable to control.

184. The animals nominated for the races are kept in special trellis-worked horse-boxes under the two equally large Grand-Stands for the aristocracy and coloured people, where the track starts and ends. Running the eye of an expert over his particular favourite, the negro makes his choice and with victorious step hastens to bet with the first person he meets. The signal for a start is likewise the signal for a fight on the flat. Words to soothe them on the part of the peace officers are words wasted in the wind: better results are obtained with the 18-inch long staves, weighted at one end by lead, with which they whack in ⅜ time the heated heads of the delinquents, who are dragged by the feet out of the dense crowds, it being out of the question for them to come along without resistance. The now empty horse-boxes under the grandstands are occupied by the bleeding, cursing, and unfortunate bookies vainly exerting themselves to get out, and where, like Tantalus, they are prevented profiting by a winner or loser. Truly I have never seen an angered tiger, lion, or raving baboon, shaking and tearing at the bars of its cage more furiously than these negroes boiling with rage at those of their particular stall until at last, their exhausted rage finds gratification in the thrilling blows which, as surely as B. follows A., take place amongst those finding themselves in one and the same horse-box.

185. A newcomer, and as yet unacquainted with the character of the negro, I at first felt pity for the poor devils at these procedures of the police which really seemed to be more than tyrannical, since they were being treated not as human beings but like refractory brutes. Still more did my finer feelings revolt at seeing the sweet-scented frail and delicately-smiling English women and Creoles regard these terrible scenes of ill-treatment with such indifference as if they were daily familiarised with them:—which certainly is the case. But I was forced only too soon to the absolute conviction that by such measures alone could the negro be controlled, and that he would be able to live just as much without food and drink as without whacking. One's compassion is lost on becoming more intimate with his character and principles.

186. As our house was for the most part surrounded by negro quarters and the building at the back was likewise occupied by them, Sunday always proved a holiday for me, for from the gallery I was then able to look down on my neighbours, whom on a week-day I would readily keep three paces away from, and see them hurrying off to church in white silk or muslin garments, as sweet-scented as rose or jasmine stocks, though, for an hour beforehand they would be watching the weather with their smouldering stumpy clay pipes in their mouths. This was the funny side of our building: though its yard almost daily provided scenes where the parents, not like human beings, let alone of the same flesh and blood, punished their children in a way that precludes them being treated as men and women themselves. How often did the howl of woe, the crying and whimpering of the youngster writhing under the blows of its inhuman mother or pitiless father call me to the window: How often did I draw back with closed eyes and stuffed ears on seeing one of the furies tearing the clothes from off her boy or girl in heedless frenzy, seize it by the hair, throw it on the floor, and then like an enraged beast stamp upon the writhing and groaning child—or when, after tying hands and feet she hung it up and, raving, foaming, and yelling, let out with a three or four strand rope, not worrying where the blows fell, till blood flowed from the wounds, mouth and nose. Still more brutal are the fights and matrimonial disputes between man and wife, or between two jealous female rivals. Teeth and nails are here the *ultima ratio*, and I have seen fights taking place below my window where, on one occasion the two contending devils had bitten into one another like raving bulldogs, and could only be parted by each one retaining in her bloody mouth a piece of the other's flesh while, on another, the daughter had bitten off her mother's forefinger, the latter reciprocating with a snap from off her daughter's breast.

187. If the negro's bare appearance by itself alone fails to exert quite the most favourable impression upon the newly-arrived European, it becomes really horrible when afflicted with one of those innumerable loathsome diseases to which he is far more subject than any other inhabitant of Guiana. Among these are specially "Yaws," Frambosia, and "Barbados Leg," all of them varieties of Elephantiasis where the whole body is covered completely with yellow ulcers that are considered just as contagious as syphilitic sores, but reckoned incurable. Elephantiasis

and its counterpart, where the negroes afflicted with it are nothing else than wandering skeletons over which the skin hangs in immense folds, are just as plentiful as other scabious diseases, and I shall never forget the impression which the sight of the first case of Frambosia made on me, with every hair already fallen off and hands and feet in complete suppuration. The most awful thing about this disease is that though those who are afflicted with it have no hope of cure, they can nevertheless linger on for years before being released from their sufferings by Death. The disease commences with the growth of a number of small swellings which first of all develop between the muscles and the skin: these gradually burst, pass into a state of suppuration and even attack the gullet and nose which caves in at the very first. The most awful stench drives everybody out of the sufferer's vicinity. Finally, the skin is loosened entirely from the muscles and actually rots away, until the suppurating process, spreading from the fingers and toes right over the body at last puts an end to the patient's infinite misery.* So much for the negro population of Guiana.

188. The natives are only very rarely to be seen in town, and when they are, very surely belong to one or other of the Warrau, Akawai or Waika, Arawak and Carib tribes: these collectively occupy the coastal areas, and for that reason have held intercourse with the Europeans for a long time past. Unfortunately, almost always as a result of it, the whole shady side of civilisation, not its bright one, has passed over to these Indians, although an immense gulf still continues to exist between the viciously inclined African and similarly disposed Indian, between a drunken negro and a drunken native.

189. The inhabitants of the real Interior never appear in the city and only carry on trade through the mediation of the tribes just mentioned who barter from them their birds, tamed mammals, hammocks, plaited baskets, earthen-ware vessels, feather decorations, fruits, resins etc. in exchange for European articles such as knives, scissors, hatchets, axes, powder, spot-print, beads etc.: the former take these into the hinterland and trade them to advantage for products of the local tribes. Unfortunately these trading coastal-tribes have such a propensity for drink that they often spend the greatest portion of the money earned in satisfying their greed for spirits although they only come and go like birds of passage. When such parties of Indians are noticed in the city, the negroes do not let them out of their sight but follow them like jackals or vultures after a caravan in the desert, and as soon as the vast quantity of liquor imbibed begins to take effect, get hold of the remaining money or "trade" already bought, either by fair means or foul.

190. Before Emancipation, when the Colony still particularly required the services of the Indians, the authorities kept a large house or caravanserie for them in the west end of the town, where they could al-

---

* This is, of course, the old conception of "Elephantiasis," which included Yaws, "Bush Yaws," what we now know as Elephantiasis, and other manifestations of Filariasis, Leprosy and probably other conditions. The condition which is here so graphically described is probably that which we now know as Leprosy. (F.G.R.)

ways find a camp on their temporary visits. Now that their help is no longer required these quarters have been allowed to go to ruin.

191. With a view to encouraging intercourse between the aboriginal natives and Planters and with the Colony, to protect them from selfish and self-interested employers, and to keep an eye on those who had shewn themselves prepared for permanent settlement, in fact, the promotion of their material and spiritual welfare, six Protectors and six Post-holders were originally appointed. Of the latter, one always lived on the Pomeroon, Essequibo, Demerara, Berbice, and Corentyn at stations established there, where they at the same time had to watch strangers who passed up and down the rivers. The Protectorship was an honorary office, to which fell the inspection of the Post-holders and was generally filled by estates' owners or well-known merchants. They are at present replaced by three paid Superintendents who have to travel through the districts every quarter. In 1842 the Colonial Parliament determined upon doing away with these appointments of Post-holders and Superintendents and leaving the Indians unprotected to their fate, but with a severe reproof from Lord Stanley, the then Colonial Minister, its action was not approved.

192. Though this Department must have exerted a very beneficial effect upon the indigenous populations in paving the way for their civilisation and material welfare had it been carried on with fidelity and conscientiousness, this was unfortunately the case in only a few well-known instances. With the small salary received from the Colonial Government the Post-holders, especially in earlier times and even up to now, were guilty of many an oppression and swindle on the wards under their charge: this entirely undermined the good object of the purpose in view, and the Indians, on seeing themselves deceived and cheated by their protectors were alienated for ever from the civilisation that was already scarcely won.

193. Owing to this treatment and exploitation of the harmless aborigines on a basis of the meanest selfishness, whereby they had to perform the hardest woodcutting tasks on the timber grants, months at a time, for a few worthless glass beads, labour of the most serviceable nature has been lost to the Colony, the employers themselves frankly admitting that an Indian, as a workman, is worth double a negro. The slightest suspicion of deceit on the part of his employer sends the Indian back to his wandering life in the forests, never to return. Even were the present-day conditions and scarcity of labour to force the Planters or Timber-grant owners to reward their honestly-rendered services like honest employers, it would be impossible to obliterate the distrust which in earlier times has been inscribed in indissoluble letters on the memory of those deceived: on the other hand, even the honourable employer is not sure of his Indian labourer, because the latter only hires himself out when the want of certain articles, that have become necessaries to the tribes living in the neighbourhood of the city, forces him to work. Upon earning as much as will supply that want, nothing will hold him back from his favourite hammock, or his beloved hunting and fishing grounds, un-

til some fresh requirement drives him to town again. The Colony owes the poor neglected Indian an old-time heavy debt, the present-day repayment of which is not to be expected. While it wanted him to suppress the many insurrections of the slaves, it used to wheedle him and once a year fix a certain day to give him a big spread and valuable presents, whereat several thousands, wearing the most beautiful feather ornaments would generally be gathered: all these means of recognition have been abandoned. "They are now of no more use to us, and there is no need to worry any more about them," is the stereotyped answer which the astonished questioner receives. No one remembers that almost all the negro revolts were suppressed through the help of the aborigines, and that in the Coromantyn negro rebellion in 1793 and 1794 the Caribs alone sent 800 young warriors to assist the overpowered Colonists.

194. During our almost four years' stay with these "Tribes without Tears," all the signs we gathered point incontestably to the fact that the Present is the closing scene for them in that great drama which everywhere is, and will be, renewed where European culture gains and has gained a footing.

195. The many European-introduced diseases that have become in different ways indigenous amongst the tribes of the interior, particularly small-pox, are helping on this closing scene to an increased degree. In 1794 the Caribs were still able to place 800 young fighters in the field: according to the census of 1841 the whole coast tribe including women and children only amounts to 500. Nine-tenths of the Arawaks have disappeared in the interval, and half of the Akawais and Warraus are no more.

196. After several days' stay in the city I was constrained to visit the more or less distant environs, to make myself at home and conversant with the field of my labours. Of course my earliest excursions could and only dared be of short duration, my brother and new acquaintances having impressed upon me the most sacred duty of not exposing myself too suddenly to the sun's rays which exert such a harmful influence on the newly-arriving European. My trips were accordingly limited to between six o'clock day-break and eight, when it was always incumbent on me to hurry back to the protecting roof and avoid the danger threatening.

197. On leaving the city proper, almost all the roads lead to the same surrounding sugar, plantain, and abandoned cotton estates: upon the latter, which at present form pasturage for cattle as already mentioned, one now and then finds an isolated cotton-tree (*Gossypium herbaceum*), dotted over with its large yellow mallow-like flowers, that rises like a sort of memorial of former extensive cultivation. What a beautiful and fairy-like sight must these cotton-fields in blossom have presented in the olden days!

198. The whole cultivated portion of the Colony, but particularly in the immediate neighbourhood of Georgetown, is an alluvial flat, exposed to flooding during the spring-tides. A front dam extending along the whole stretch of coast-line parallel with the sea or river on the inner side of which run the public streets, protects the estates and has to be kept in repair by the respective owners of estates bordering on it. To

save the plantations from being flooded in the rainy season from the land side, a similar dam is raised there. Trenches or canals divide the different properties one from another, with, in addition, a main-outlet canal, 12 feet broad and 6 feet deep surrounding every estate into which all the smaller ones open. With the commencement of the ebb, the banked-up waters within can be run off by means of large sluices into the main canal, this being in communication with the so-called navigation trenches that divide the estate into different fields, and along which the cut-down sugar-cane is transported in large punts to the mill.

199. Originally every Colonist was allotted a frontage of 100 Dutch roods and a depth of 750 roods, or 250 acres for cultivation. It was only when this area was cultivated and cleared that he was allowed an extension of his property and in return for a small sum another 250 acres could be granted him. Every Colonist was allowed to procure land in this way until, on coming into collision with the next estate, he found an insurmountable obstacle to the further extension of his property. The superficial area of individual estates varies mostly between 300 and 2,000 acres, although at present only a few can keep more than from 100 to 500 acres under cultivation. The cultivated ground usually consists of a rich stiff and clayey marshy soil of great depth which is in many cases mixed with salty and vegetable matter. In this soil, the sugar cane lasts for from 20 to 30 years, and indeed even up to 50 years without requiring new transplanting. If only to give an example of the extraordinary fertility of this soil, I would mention that 6000 lbs. of sugar or 26,000 lbs. of plantains are often harvested annually from one acre, though one finds such capacity for produce only quite close to the coast, and on the banks of the rivers: amongst the latter, only so far as the salt water reaches at flood-tide, which on an average is mostly ten miles. Beyond this, are to be found barren sandy or yellow loam flats which are very generally covered with a three to four foot deep light vegetable substance called *Pegass*. This soil is suitable only for coffee planting.

200. The district comprising the estates, like that of the city, has a flora of its own. The luxuriance of the gardens and open spaces, to the wealth of which the East Indies, Africa and the West India Islands have contributed, disappears here and the monotonous uniformity of *Rhizophora* and *Ficus* is only occasionally interrupted by pleasant avenues of *Erythrina Coralldendron* Linn., *Tamarindus Indica* Linn., *Artocarpus incisa* Linn., *Persea gratissima* and Orange-trees. These either lead to the individual estates' properties, or stretch along the dams and canals dividing the different plantations from one another; they are hemmed in with a thick undergrowth of *Lantana* in a number of varieties, as well as with *Cordia hirsuta* Willd., *C. Schomburgkii* Benth., *Cassia alata, C. occidentalis* Linn., *C. latifolia* Meyer, *C. venenifera* Röd., *C. calliantha* Meyer, *Psidium* and a number of *Mimosa*. The broad grass and pasture flats are generally covered with *Asclepias curassavica* Linn., *Crotalaria glabra* Willd., *Ruellia tuberosa*, *Hibiscus bicornis* Meyer, *H. spinifex* Linn., *H. brasiliensis* Linn., *Leonotis nepetaefolia*, *Tiaridium indicum* Leh., *Stachytarpheta jamaicensis* Vahl, *Solanum erythrocarpum* Meyer, *S. mammosum* Linn., *S. verbascifolium*,

Chenopodium ambrosioides Linn., *Phyllanthus hypericifolia* and *P. Niruri* which are enlivened by a fauna peculiar to the city and its environs. Next to the inquisitive little chap which immediately after landing attracted my attention so forcibly with its "Qu'est-ce-que-dit," I took equal interest in the numerous carrion crows, *Cathartes aura* and *C. foetens* Ill., which, as protégés of the law have become almost as tame as domestic fowls, because anybody who either within the city or its environs wants to sacrifice the bird to his love of sport, is mulcted in a fine of 50 dollars. There cannot however be any cleaner sanitary police than these creatures: indolent and sullen they perch with relaxed wings upon the fences, hedges, roofs, and trees until the tempting smell of a carcase or other refuse allures them to the open drains and street gutters, or onto the pastures beyond the city, to start their work of destruction on some dead beast which in a few hours they have already changed into a cleanly prepared skeleton.

201. Outside the city, just the same as inside, one hears repeated from out of every tree the everlasting question "Qu'est-ce-que-dit" of the *Tyrannus sulphuratus* or *T. flavus* which, together with its relatives, the *T. crudelis* Sw. and *T. Lictor*, constitute the main body of the feathered army of occupation. *T. flavus* is the most unsubdued of the whole family, the fear and terror of its smaller mates which it only too gladly chases or robs of its young and eggs, just as it is at the same time the most talkative and inquisitive; *T. crudelis* is already dull of tongue, while all other species have forgotten how to ask the question. *T. crudelis* and *T. sulphuratus* replace our swallows and wag-tails, and with shrill note chase for part of the way every bird of prey that puts in an appearance. The *Tanagra Sayaca* Linn. and *T. olivascens*, the blue and brown "sacky" respectively of the Colonists, are just as plentiful as these in the city, while as soon as one gets into the country the husky screams of the *Crotophaga Ani* Linn. are to be heard: these are the "old witches" of the Colonists, that perch either in the shadows of the bushes or in and among the cattle and let themselves be carried about on their backs, like our starlings upon the sheep. The fact of their liking to stay close to a dead beast to pick insects, maggots, and larvae has probably given rise to the false impression that they live on carrion: the former together with the fruits of *Psidium pyriferum* and pods of *Cayanus indicus* constitute their only food, for which reason they can be often greeted near fields containing the latter. The peculiarity that several females join together during the laying and breeding season to form a common nest the size of which depends upon the number of associated prospective mothers, wherein to lay and hatch their eggs in common, does not invariably present itself with *Crotophaga Ani*, because I invariably found only from five to seven greenish white eggs in a nest: as I subsequently discovered, the peculiarity only takes place with *C. major*. The thick bushes running along the trenches are enlivened with the dainty *Muscicapa bicolor* Gm., or "Cotton-bird," so named from its building its nest only from out of that material, and *M. leucocephala* Tem. or "Parson Bird" a term acquired from its black plumage and little white head; the trenches themselves are dotted with the *Parra jacana* Linn., *Ardea scapularis* Ill., and *A. nivea* Lath., while the frequented and trodden

carriage-roads and foot-ways have been chosen by the pretty red-breasted *Icterus guianensis* Briss. and black *I. sericeus*. On nearing the avenues of *Erythrina*, the charm of their lovely floral decoration is increased yet tenfold by the large number of humming-birds, particularly the *Trochilus pectoralis* Linn. which, like a swarm of bees, flitter round the innumerable blossoms while the shrill cry of the little *Psittacus taipara* Linn. is to be heard coming from the red flower bunches: the latter birds, unlike the former, that are content with the nectar alone, actually at the same time pick away at the pistils, but never at the stamens of these fragrant flowers. When one turns one's gaze from the blossoming *Erythrina* to the flowering tamarind, the gold-glistening *Trochilus moschatus* Lath. is seen hovering round it in similar fashion while the loud chatter from out of its feathery leaves betrays the garrulous companies of dull green *Psittacus passerinus* Linn. and *P. gregarius* Spix. The *Icterus icterocephalus* Daud., *I. xanthornus* Daud., the *Tanagra magna* L. Gm., *T. Jacapa* Gm., *T. nigerrima* Gm., *Euphone violacea*. *E. chlorotica* and *Cassicus niger* Daud., fly with confusing clamour over the rich plantation fields while the shy little *Crex mustelina* peeps cautiously out of the grass, and as quick as thought draws back immediately upon noticing anything suspicious. *Crex melampyga* and *Porphyrio martinica* have chosen the plantain or sugar fields for hiding-places.

202. German poets, unaware of the sympathy existing between a pair of *Psittacus passerinus*, have chosen a pair of doves as Love's idyllic symbol:—but how far the refinement of the one surpasses that of the other! In the case of *Psittacus*, absolute harmony reigns between the reciprocal Willing and Doing. When the one eats, so does the other: if one takes a bath, the other accompanies it: should the male start shrieking, the female immediately joins in: when the one is sick, the other feeds it, and supposing several are settled on a tree, the respective pairs never separate.

203. During the ripening of the fruit of the *Psidium pyriferum* and *pomiferum*, whole flocks of *Psittacus menstruus* Linn. visit these trees, but when the season is over, disappear as quickly as they came; the same thing also happens with the blue headed *Psittacus Maximiliana* Kuhl. during the ripening of different species of *Ficus* which grow in the vicinity of the coast. Both species in the Colony are considered great delicacies in Georgetown.

204. Amongst mammals, only representatives of beasts of prey are really to be seen in the immediate vicinity of the city, because except for a *Nasua*, *Gulo*, *Procyon*, *Didelphys*, *Chironectes* and now and then a Jaguar, it is rarely that a deer, a *Dasyprocta Aguti* or a *Coelogenys Paca* puts in an appearance: a far more frequent visitor on the estates farther remote is the jaguar in particular.

205. Everybody who wants to carry a gun, *i.e.* to hunt over the cultivated portions of the Colony, has to pay a yearly licence of 8 dollars: only Indians are exempt from it. The reason for the tax dates from the time before Emancipation when it was imposed to render the carrying of fire-arms by negroes a matter of difficulty, though after they obtained their freedom it was considered advisable to retain it; the idea was that

the whole black population instead of devoting their attention to work, might rather spend their time in the noble art of hunting, and the precaution has naturally borne but little fruit considering that the price of a gun and the amount of the tax are earned quickly enough.

206. It still seemed as if I were to be everywhere the first to pay the penalty which foreign custom, the sea, and the climate exacts from everybody—some lucky dogs excepted. In London I committed so many a breach of English etiquette that I got laughed at: on the voyage out I was the first to succumb to sea-sickness, and here again I was the first amongst all the passengers on the "Cleopatra" to fall a victim to yellow fever. Whether it was my neglect to pay more attention above everything else, to the warning about avoiding exposure to the direct rays of the sun, than I could possibly do in view of my disposition and the thousands of natural history treasures which surrounded me, or whether it was a matter of constitution—at any rate, the mental excitement into which the new unhabituated life had transplanted me, was now only too soon to be appreciably deadened by the unutterable pains and torments of that awful disease which I suffered to a degree beyond anything which even the doctors themselves could call to mind for a long time past.

207. My brother and I had spent the evening prior to the attack amongst some of our acquaintances: on returning home I tumbled into my hammock and felt fine. Towards morning a dull oppressive headache awakened me from sleep and as I hoped to relieve it on my usual morning outing, made as early a start as possible. But how I had deceived myself! I could have been away hardly an hour when my strength gradually failed, the headache increased, and insufferable pains in the back now became associated with it. I dragged myself home as best I could, cast aside the specimens collected on this fateful excursion, and threw myself into the hammock, where my brother found me already half senseless with most frightful fever. His first look only too evidently convinced him that I had fallen a victim to the terrible Destroying Angel of the Tropics, though I myself learnt the real nature of the disease only on my convalescence.

208. After giving the people around me the strictest orders not to satisfy my ignorance on any account whatever, he immediately hurried off to call in a well-known doctor, who assured me that I was only suffering from the usual climatic fever and would soon get over it. Twenty grains of quinine and as much calomel, which I had to take every two hours either as powder or pill were the medicines the first doses of which I took while yet in a state of consciousness. This stage nevertheless disappeared rapidly enough, for which reason I can really only say but little concerning my illness from personal experience: the description of its course is only according to what was subsequently told me. After the calomel had taken effect, they had stopped it, but continued dosing me with quinine. All mental exertion ceased: the following three days are a blank in my life—I cannot include them in it. By next morning they had already shaved my head and spread the whole back of it and nape with a spanish-fly plaster. All measures proved of no avail: the fever still increased and finally, to sustain my entirely exhausted strength,

they applied the most powerful stimulants: indeed, even during the most critical stage they had given me within a couple of hours two bottles of champagne, had packed my whole body in ice, and wrapped it round with towels soaked in ice-water. In spite of four of the best medical men being in continual attendance, and of everything being done to avert the onset of the last stage of the disease, this nevertheless took place on the afternoon of the fourth day. With the appearance of the black vomit consisting of a coffee-like evacuation that now set in and at the same time indicated the initial internal disintegration, the doctors gave me up as past help. The breathing and the heart-beats were no longer noticeable and all had left the death-chamber. Mr. Glascott then returned to the room, laid his hand again upon my heart, bent his face once more over my mouth and still found breath. The quickly recalled medicoes renewed their operations and the blood suddenly burst from mouth and nose to such an extent that it was six hours before it could be arrested. The hope of recovery was again awakened in my brother, and the doctor's "if your brother survives till midnight, there is hope," after cessation of the bleeding, were the first words of consolation from the self confident and well-known Dr. Smith. I lived over midnight and was also for twenty years the first case in Georgetown that had survived an attack of yellow fever after onset of the black vomit.

209. I accordingly remain indebted for evermore to my friendly and self-sacrificing physicians whose combined efforts I have alone, after God, to thank for my life. Probably none of them will ever see this expression of my gratitude, yet I am forced to give utterance to it. And although I am deeply indebted to all, I feel more particularly so to one of them, a countryman, become so dear to me, Dr. Koch of Nürnberg, who in the year 1833 had fled to avoid the Investigations into the then Student Corps, and proved himself to me in Georgetown an honourable and noble German: neither day nor night did he leave my bedside, until he was finally and fully convinced that all danger was past. It was through him also that I learnt I had had Yellow Fever—and that I had indeed been attacked was demonstrated at first sight in the looking-glass which he held before me, wherein—not myself, no, it could not be—but a citron yellow hollow-eyed bald-headed fellow met my astonished lustre-less gaze: even the whites of my eyes had taken on the colour. As previously mentioned, the convalescence progresses in equal proportion with the rapidity of development: the almost visibly declining vitality at the outbreak of the disease is restored at just as quick a rate as soon as the crisis is over. Notwithstanding my having to learn to walk all over again, and that at first I could not move an arm, much less the whole body from one side to the other, I nevertheless made a fair recovery within the course of four weeks: of course, in addition to my strong constitution, the beneficial and lively knowledge of the general sympathy, even on the part of those still unknown to me, contributed a good deal to this. Every morning my room was brightened with the freshest and most exquisite of flowers: the most luscious fruits smiled at me from neatly plaited little baskets on all the tables and no sooner was my health sufficiently re-established to allow of my leaving the room, than the Governor's carriage came every evening to our house to enquire whether I might go for a drive:—

in short, everything had combined to make me forget that under a foreign sky and among comparative strangers, I had overcome a disease which only a few, attacked to the extent that I was, had been able to survive.

210. My illness had made many a heart quake, but particularly that of Mr. Walton the draughtsman of the Expedition. Hardly had he learnt that I was down with yellow fever than he very hastily exchanged home and city for a remotely situate plantation. But as his residence here also could not protect him from slight climatic fever his well-contrived, calculating caution replaced his former rash enthusiasm for travel, with the result that, what with the many rumours spread concerning dangers threatening our Expedition, he made up his mind to return as quickly as possible to England where he would be safe from perils and yellow fever. His determination was fixed and my brother's persuasive powers that he should postpone the delivery of his already written resignation to the Governor proved of no avail. Although His Excellency was not quite satisfied as to the urgency of his return and did not want to let him go under any consideration but particularly because our preparations were visibly nearing completion at a very early date, my brother managed to arrange that the matter be left in the hands of a Medical Board. This fortunately decided that Mr. Walton could not accompany the expedition without danger to life, and thus he parted from us without having seen realised his fantastic dreams of the sylvan scenery of a tropical virgin forest. During his stay Mr. Walton had only painted one single small landscape, which however cost the Colonial Department more than £300 it having very generously paid his passage out and home, together with his stipulated salary up to the time of his arrival in England.

211. Months must necessarily pass before another artist could be despatched from England, and the Expedition would have had to leave without one had not a young doctor of the Colonial Hospital, Mr. Echlin, who was at the same time a skilful draughtsman, readily offered his services to accompany us into the interior, not only as artist but also as medical officer, until the gentleman requisitioned for should arrive from London.

212. It would be about another four weeks before we could leave for the mouth of the Orinoco. Before getting ill I had already received the most pressing invitations not only from our gallant countryman, Mr.. Bach, but also from the owner of one of the largest sugar estates (Zeelandia) on Wakenaam Island at the Essequibo mouth, Mr. Arrindell* and his sweet wife, to come and spend a time with them. My illness had so far prevented me accepting, but now the doctors themselves insisted upon my leaving the city until the expedition was ready to start so that I might join it in perfect health and strength. However gladly I would have hurried off to Mr. Bach, Zeelandia was nevertheless recommended as the healthier spot, and I had to follow their advice.

213. The estate's schooner which came to the city twice weekly offered me a quick passage to Zeelandia where I was affectionately and heartily received by Mr. Arrindell's equally charming family—Mrs. Arrindell

---

* He defended Rev. John Smith after the East Coast Slave Insurrection, and lived to become Chief Justice, and be Knighted, (J R.)

and Miss Ross, a near relative of Mr. Arrindell who, having no children of his own, had adopted her on the death of the latter's father, the doctor on the Island of Tortola.

214. Miss Ross was undoubtedly the most beautiful creole I had as yet seen: 17 years of age, intellectual, and gifted with a sparkling humour. What wonder then that—with the loving attention and motherly care of Mrs. Arrindell and the intimate terms like those of sister and brother that were quickly established between Miss Ross and myself, and allowed of my soon having no secrets to hide—my health returned more quickly than I could ever have dared to hope. In the continual company of these ladies the days sped like lightning and if the conversation flagged of an evening, the rich and choice library quickly started it on its course again. There was only one thing that these ladies could not stand, and that was my English pronunciation. Taking compassion on me Miss Ross gave me lessons and never indeed did a teacher have a more diligent pupil, nor a learner thirsting for knowledge a more perfect instructress. I made giant strides and must regret all the more sadly that my brother's summons to Georgetown prevented my reporting whether Miss Ross would have progressed as rapidly with her German that I had commenced teaching her, as my English pronunciation ceased jarring upon her ears.

215. Just as Mr. and Mrs. Arrindell treated me, a stranger, so they treated their subordinates, and I must admit that I had never as yet seen such amicable relations between employers and employed as was daily, nay, hourly, unfolded before me.

216. Every morning and evening the whole of the servants gathered in Mrs. Arrindell's room where she read the prayers; just in the same way, in conjunction with the estate's school-teacher, the former clergyman having been transferred, she led the Sunday prayers in the little church, while Miss Ross accompanied the singing on the organ.

217. Although at first Mrs. Arrindell's motherly anxiety would on no account let me accompany her and Miss Ross on their daily morning outing, which was always on horseback, it was not many days before she was unable to resist my keen desire to learn something about the laying out, cultivation and management of the estate—and a third horse soon stood saddled at the front. Accompanied by the ladies than whom I could not have wished for better mentors, I commenced my economic and industrial enquiries. Miss Ross, though but a novice in the noble art sat her spirited little Victoria in such dashing and easy style as to make me think that in the pretty creole with dark sparkling eyes and black hair covered by a broad straw hat I already recognised one of the Amazons whose realms we hoped to be the first to discover on our journey to the interior. It was on these morning rides that I learnt to know not only the island itself, but with the manager's help, also something about the methods of sugar-boiling and other matters connected with it.

218. Zeelandia is a large estate lying immediately on the northern spit of the island of Wakenaam, so that it is being continually washed by the billows of the ocean and exposed to the cooling breezes of the sea. Not far from the landing stage on a refreshing lawn, fringed by majestic cabbage-palms and fruit-laden orange-trees stood the charming mansion with its open gallery: it was enclosed by a thickly hedged crescent of

Clerodendron inerme and *Hibiscus rosa sinensis*. The manager's quarters as well as the store and boiling houses were erected some distance away. Attached to these on the westward, and extending at right angles along the banks of the Essequibo was a long row of nice white dwellings: these were for the working negroes living on the estate and were surrounded and shaded by a broad leafy roofing of *Hura crepitans* Linn., and lovely *Aeschynomena*, *Erythrina*, *Bauhinia*, *Poinciana* and *Gardenia*. The extensive and prolific cane-fields, etc. lay in front of the owner's residence.

219. In accordance with the changes it has already effected socially and industrially, the application of steam power has exercised considerable alteration and simplification in the process of sugar-boiling. What formerly required a number of hands can now be done by it alone, while the small supply of manual labour at present offering can still be utilised by the estate for field-work instead of being frittered away uselessly.

220. Although the cultivation of cane and its manufacture by boiling is generally known, both processes vary so much and, in several respects so essentially, according to the nature of the lands producing it, that it may not perhaps prove uninteresting to many a reader, were I to give a short sketch of the particular procedures.

221. After the land intended for cane cultivation has been cleared of all timber, thoroughly turned up with hoe and spade, supplied with irrigation trenches, divided into beds, and surrounded with parapets and dams to prevent the water from out of the canals getting into the plantation, parallel drills one foot broad and nine inches deep are hoed across all the beds at intervals of from four to four and a half feet. Into these drills at intervals of every two feet are stuck either three or four "tops"—the tops or terminals of old plants which are best suited for the purpose—or else cuttings, 15 inches long with three or four eyes in them, that have been cut from off the top ends of the ripe canes at harvest time. Twelve inches of earth cover them so that only three inches are exposed. They have not succeeded as yet in propagating the plants from seeds in Guiana. Six to eight of such drills constitute a bed, and each bed is separated from its neighbour by a one or two foot drain leading into the irrigation trenches already mentioned. Within four weeks' time the cuttings have caught, when the earth is moulded around the young plants, a portion of the heaped-up soil filling up the interspaces between and around each. At the subsequent weeding more earth is similarly moulded up so as to supply the roots with quite a thick bed of soil. Three months after planting, the young plant already sends out new shoots (canes): from now on until the sixth month it has to be kept scrupulously clean, and to give it air, must be trashed *i.e.* cleared of its dead leaves. In the course of ten months, particularly on new and still virgin soil, the cane reaches maturity, when it is cut and the first crop harvested. The genealogy of the field commences with this first harvest for each succeeding one is accurately recorded so that the manager can always tell whether the cultivation is in its first or eighteenth crop. When this is reached the land is planted with fresh tops or cuttings, and new records begin. The first crop is always the richest in sugar. The cane also varies in size with the fertility of the soil. In a new moist soil

it often reaches a height of from ten to sixteen feet while in dry limy ground it rarely exceeds from six to ten. Soon after the crop reaches maturity, the root-stock (stool) starts sending out new shoots for the next crop or ratoon. In a rich soil and with good attention and care, the original plant can even supply 18 crops. The ground receives no other manure than what it gets from its own fallen trash. The chief work that can only be carried out by manual labour is the continual hoeing and weeding and the removal of shoots springing up after the rooting out of the timber, especially those of the *Cecropia peltata* Linn., which on account of its far-reaching roots is the greatest enemy of the planters, for it not only impoverishes the soil, but if even a rootlet as long as one's finger is left behind it will start afresh and likewise multiply through the germinal capacity of its seeds. Indeed, according to the nature of the bush and size of the trees carried, the cost of bringing under cultivation an acre of land intended for agriculture runs into 70 to 100 dollars. Two strong labourers can keep three acres in good condition and even bring them to maturity without having to over-exert themselves. According to general opinion, a deep rich clayey soil mixed with sand or gravel and decayed vegetable, as well as a loamy one mixed with rotted plant material, are the most suitable for sugar cultivation. With such a soil, based upon twelve years produce, inclusive of good crops and bad ones dependent upon unsuitable weather, every acre annually yields on an average 2½ tons of sugar, 250 gallons syrup, and 100 gallons rum 34 per cent. overproof.

222. A moderately damp yet hot year with the thermometer varying between 80° and 90° F. and South and East winds prevailing, is generally considered the most favourable weather for cane production, while a lower temperature with ruling North-West and North-East winds and unusually hot and dry weather is considered to be most prejudicial. The most favourable period in the development of cane for the production of sugar comes immediately after the arrows (blossoms) are formed.

223. On the larger and rationally worked estates one sixth of the whole area under cultivation is newly planted every year, and the main crop gathered in January, February, March, or during the last four months of the year: the months of October, November, December and January are reckoned to be the best for quality of sugar. The capital outlay, to keep an acre under good cultivation, together with the cost of manufacture of its proceeds, runs on an average into 80 to 90 dollars.

224. After cutting, the ripe cane is brought in so-called punts to the mill where it is squeezed between three iron rollers turned on their axis by steam power. The rollers are fixed as in a triangle with their surfaces so closely approximating one another that on the first time through all the juice contained in the cane is expressed, and runs into a tank placed below, from where it is pumped into a tub standing on a higher level. The pressed-out cane (megass) falls into a barrow which, after being filled, is brought on rails by a simple mechanical contrivance to the large "megass logie" to be dried, after which it is used for firing the boiling vats.

225. After the tub is filled, a quantity of unslaked lime is thrown into it to promote separation of the coarse vegetable particles and the contents

then led into the boiling vat: this has to be done fairly rapidly, because the juice quickly starts to ferment, a process that has to be prevented at all costs. Along the fire walls stands a row of four to five copper vats in decreasing sizes in which by pouring out from the first into the second etc., room is made for the juice rushing down from the tub. In the last and smallest of the vats this is thickened to the consistency of syrup, and is conveyed from there to the Trays or Vacuum Pan. The scum rising during the boiling process runs off in a gutter leading to the distillery. The vacuum-pan now generally employed is placed either immediately opposite or somewhat farther away from the vats: in the latter case the syrup is pumped into them. After the sugar has completely separated into individual crystals, the crystalline mass still mixed with the noncrystalline fluid molasses is crammed into large square air-tight iron boxes across which at about a third of their depth from below is stretched another wire-mesh false bottom upon which the stuff rests. The empty lower space is exhausted of its air by means of two steam-power pumps opening into it, by which means the whole of the molasses is extracted from the crystals lying above almost absolutely pure, and led into a cistern near by. Through these simple improvements and simplifications of the whole boiling process there is a saving of three tenths in time alone, because at present the whole process, which formerly required eight days, in addition to undivided attention and labour, is now completed within 15 hours. After the molasses is extracted, the raw crystals are immediately packed in large casks, which nowadays do not require to be pierced with holes to drain off the molasses since none remains behind among the crystals. After running off the molasses from the iron boxes and completing the fermentation of the scum the whole is brought into the distillery. The captains much prefer this form of sugar to that crystallised by earlier methods, when during the voyage the molasses escaping into the ship's hold, whither it trickled from hogsheads that had been drilled, had to be pumped out daily, a procedure which in the case of large vessels, meant on an average an hour's loss per diem.

226. Windsor Castle, a sensibly arranged and intelligently conducted sugar-estate of 750 acres on the Arabian Coast, together with the attached buildings and working plant was legally appraised at the following value, the subjoined particulars of the property giving the necessary details:—

411 acres cultivated land for sugar-cane at $200 per acre	$ 82,200
40 acres for cultivation of plantains at $84 per acre	3,360
250 acres for later cultivation, but not yet cleared, at $30 per acre	7,500
3 Megass Logies, with the log-carts and rails belonging thereto	14,000
Steam Engine and Steam Mill, together with Vessels for Juice etc.	18,000
Boiler House, with Vats, Clarifiers, Coolers etc.,	
Manager's House, Cisterns for Molasses, Distilling Rooms and Distillery Apparatus	16,000
Boats and Cane Punts	2,000

Landing House and other spaces, Crane etc.	1,600
Bridges, Sluices etc	2,660
Live Stock	1,500
Labourers' Dwellings	24,000
Residence and Office	5,000
Hospital for Sick Labourers	1,000
Cooperage and Timber Yards, Store Rooms etc.	2,500
Total	$199.520

And yet at the present time the owner would hardly get $10,000 for it.

227. A cane-field swaying backwards and forwards in the light sea-breeze, undoubtedly constitutes one of the most pleasing of landscapes, becoming even more delightful and imposing however to the observer's gaze when enclosed in beautiful fields of plantain with their huge sap-green leaves. The plantain (*Musa paradisiaca*) which before Emancipation was the chief ingredient of the slaves' dietary, is cultivated upon almost every estate. The same rôle that the potato plays in the national economy of Europe is taken by the plantain in the West Indies. If bananas are eaten only when ripe, plantains are chewed when already half-grown, enjoyed in all stages, and prepared in the most different ways. Taken out of the skin half-ripe, roasted on the ashes and then eaten with butter, they take the place of bread at breakfast: in a half matured condition boiled with spice and meat, they form a very tasty vegetable: dried and pounded they afford a splendid flour for puddings. When quite ripe, as shewn by their yellow colour, they are used as vegetables as well as eaten raw, but in the latter case are no good for the European on account of their easily giving him dysentery.

228. Plantains are also propagated by suckers because as with the sugar-cane, the seed does not arrive at complete germination. Within ten or eleven months, the young sucker already bears fruit, of which individual bunches frequently weigh from 60 to 70 pounds, and I have been informed of a number of cases where one acre has yielded 30,000 lbs. of plantains. As every stalk only bears once, this is cut down at the same time as the crop, so that the whole of the sap in the root-stock may supply the young suckers of which from three to four are left.

229. The cultivation of the plantain requires but little care. The weeding of the field once or twice, and the cutting down of the trunk with its ripe fruit is all the work required. The Banana (*Musa sapientum*) is less frequently cultivated and generally eaten only when ripe: it also requires from 9 to 10 months to ripen, but then easily becomes rotten unless the individual fruit is cut off and dried in the sun or oven. The stem of the banana is shorter and more compact than that of the plantain, just as the fruit also at maturity can be distinguished from that of the latter by its brownish red colouring and more compact growth. Amongst other varieties there is distinguished above all others in virtue of their vigorous growth the *Musa Cavendishii* Paxton and *M. chinensis* Sweet, a dwarfed variety.

230. For some years past an extremely peculiar disease has introduced itself in the *Musa* plantations: this has become particularly dangerous owing to its having proved so infective that if one shaft is attacked the whole plantation follows suit and perishes. Unfortunately one has not yet found any remedy for this "Worm" disease as the Colonists call it.

231. When the tree is attacked its outward appearance immediaely shows it and the whole plantation has to be cut down to prevent the further spread to others. The disease itself starts from the innermost vascular bundles which take on a brownish colour intermixed with a number of black spots. This decomposition of the sap soon extends to the whole shaft. The growth of the plant as well as that of the fruit is arrested and a resinous exudation renders the latter absolutely uneatable. If the same piece of land is going to be replanted, suckers from a healthy plant must be used, because experience has taught that even the suckers contain the diseased material of the mother-plant. Unfortunately my stay was too short to make myself absolutely certain of the real cause: in my opinion the whole phenomenon comes about through a parasitic mould, which has its origin in the altered chemical relations of the soil consequent on the existing state of cultivation. Ten years ago the pest was completely unknown, but at the present time has gained such strides that it becomes the serious duty of the proprietors to have enquiry made into its origin on scientific lines.

232. As the owners of the larger estates reside for the most part in England, their control is almost always placed in the hands of a Manager who has to direct the whole cultivation as well as transact all outside and inside business. Associated with him are the Overseers who are employed in greater or less number according to the size of the property, and fairly correspond with our German *Verwalter* for they are generally young men who want to learn the thorough groundwork of Estate Cultivation and Management. Next to these are the Headsmen (Drivers) chosen from the most diligent labourers, under whose direct supervision the out-door and in-door work is carried on. An estate often has from six to eight such Drivers. Owing to the well-known indolence of the negro the field-work is let out by piece work: those employed in the boiling houses and farm buildings receive a daily wage because they are not engaged there permanently until they can prove their ability after long experience. Every labourer who works upon an estate receives free quarters, free medical treatment and medicine, and, according to the number of his family a fixed piece of land for cultivating what is required by his own household, or else a fixed quantity of plantains weekly. If the plantation is at all extensive, the proprietor is bound to keep, at his own expense, a school-teacher for the labourer's children. If on the other hand the properties are small, a joint teacher is usually engaged by three or four neighbouring ones, just as several estates have a common preacher and a common church. Briefly put, the above is probably what was most worth knowing among the things I noted during my stay on the Zeelandia Sugar Estate.

233. In the charming and bountiful fruit-gardens the beautiful bread-fruit trees (*Artocarpus incisa* and *A. integrifolia*) particularly attracted my attention, and I do not consider it out of place here to supply a short sketch of its introduction from Asia and Islands of the Pacific to the West Indies. Although Captain Dampier had already in 1688 brought to Europe the first reports concerning this tree, the information nevertheless passed unnoticed until Captain Cook's companion, the celebrated Dr. Solander, revived it in glowing terms. The idea of obtaining bread without any toil as Nature's spontaneous gift sufficed to secure it general attention: subsequently it even inspired a Byron. Petitions were soon despatched from the West Indian Colonies to George III praying that the tree should be introduced at the cost of the State into all the Colonies the climate of which allowed of its cultivation.

234. Under Bligh, at that time Lieutenant, who had accompanied Captain Cook on his last expedition, the "Bounty", a Government ship of 215 tons burden, was put into commission to obtain young plants from Otaheiti. An ample space supplied with large hatchways and draughts was wholly set apart between decks for their reception and was at the same time packed with a number of large cases having double bottoms: the plants were to be placed in these while the superfluous water was to run off into the lower spaces, the roots being thus protected from stagnation. The ship managed to start on her journey to the Society Islands by the end of 1787. At Cape Horn contrary winds forced Lieutenant Bligh to make for the Cape of Good Hope, and sail to the Islands *via* Australia: he finally reached them on 10th October 1788. By 3rd April 1789, 1015 living plants had been set in the beds prepared for them on board ship, and next day the Bounty weighed anchor and turned for home.

235. On the 28th April however a mutiny that had already been hatched by the crew at Otaheiti broke out, Lieutenant Bligh was set upon in his sleep and gagged, and any one not wishing to join the mutineers ordered to stand alongside him. Of the forty-six forming the crew eighteen remained loyal, thirteen of whom, together with Lieutenant Bligh, were then forced to step in to the long-boat that was lowered into the water, four of them being kept back without any reason being offered. Lieutenant Bligh says in his account of the mutiny, "People will ask me, what was the motive for this deed? I can but find the one and only reason that the mutineers probably flattered themselves that amongst the natives of Otaheiti they would spend a happier life than in England."

236. After supplying these fourteen outcasts with 150 lbs. bread, a few planks, some wine and rum, a quadrant and ship's compass, the vessel turned about and left them to their fate. Inflexible and courageous the outcasts started on their voyage and fortunately reached Tofoa, one of the Friendly Islands, but the hostility of the natives induced them to put quickly to sea again. They soon made New Holland whence they turned to the Eastern Archipelago and after inexpressible hardships landed at the Island of Timor. The Dutch Governor rendered every assistance and arranged for both Bligh's and his companions' passage to

England, where he was straightway gazetted Captain and Commander of the Royal ship "Providence" which was put into commission again with the utmost despatch to repeat the voyage.

237. She sailed the 3rd August 1791 in company with the "Assistant:" both ships reached Otaheiti safely on 9th April 1792 and by 17th July 1781 tubs and barrels were brought on board with healthy plants: the vessel left the Island and after many a danger arrived on 2nd October at Couzang between New Holland and New Guinea, where the plants that had died on the voyage so far were replaced by new specimens, and on 17th (?) December* she dropped anchor at St. Helena, where Captain Bligh took on board some other kinds of fruit-trees, amongst them the Akee (*Blighia sapida*).

238. On 23rd January 1793 he got to St. Vincent where he left 333 bread and 211 other fruit-trees, taking in exchange about 500 tropical plants for the Botanical Gardens at Kew. From St. Vincent he made for Jamaica where he delivered 347 bread-trees and 276 other fruits. He also took the new plants to Grand Cayman and other Islands, and finally landed in England on 2nd August 1793.

239. In spite of all the trouble and risks taken, in introducing the bread-fruit, subsequent events showed that the encouraging and confident hopes centred on its cultivation were not to be fulfilled at all. The plantain and banana have neither been replaced nor superseded, because it is only in cases of extreme necessity that the negroes turn to bread-fruit as an article of food.

240. In company with my charming Cicerone I was soon able to extend the area of my excursions farther afield along the virgin forest through which practicable roads had been cut on all sides so as to establish regular communication between the different estates on the island.

241. What hours of innocent pleasure we spent together when, at low tide, engaged in mutually instructive conversation we rode along the beach, now lapped with the waves and cooled in the breeze, or when we turned into the half-obscured shady paths of the primeval land covered with trees, and for minutes at a time watched the airy movements of the elf-like *Aërnauta Nestor, Anchyses phorbanta, Hector Protesilaus* down to the little *Chorineus.* As these flittered under the dazzling sunlight in one continual chase over the flower carpet of lovely *Securidaca volubilis* Linn., their colours ever changed from glittering gold to darkest indigo-blue, from bright carmine to a deep red, or from the clearest emerald to the most luscious green. I also found here for the first time pine-apples with leaves five to six feet long which had grown so thickly, one in between the other, that they formed absolutely impenetrable hedges. The fruits are generally very small but, as a compensation, are exceedingly sweet and aromatic.

242. The fauna showed fair correspondence with that in the environs of the city. Nothing however interested me so much as a regular colony of *Cassicus persicus* Daud., which had selected as their home an unusually large *Bombax globosum* close to my study window.

---

*The text has September, which is clearly an error. (Ed.)

243. I had never yet experienced such excitement and noise amongst birds. The whole of the residents of this huge tree were just then busily engaged in improving their long purse-like nests and building new ones. Its peculiarity of successfully imitating the cries and notes of all the four-footed and winged creatures round about has earned for it the name of "Mocking Bird." There can hardly be a more turbulent or noisy songster than this mimic. If the rest of the animal world is silent, it sings its own particular song which has something quite pleasant about it. The Toucan perhaps will let its hollow voice suddenly ring forth, and the Cassicus turns into a Toucan: should the various woodpeckers start their hammering, the Mocking Bird is a woodpecker: let the sheep bleat, and the bird is never at a loss for an answer, but if no other sound falls for a few seconds, it harps back again onto its own peculiar note, until this is interrupted perhaps by a gobble-gobble, or quack-quack in the farm buildings, when it immediately turns into a turkey or a duck. This mimicry is accompanied simultaneously with such extraordinary movements and contortions of the head, neck, and whole body that I have often had to burst into loud laughter at the garrulous and assuming bird. *Cassicus haemorrhus* Daud. is very generally associated with *C. persicus* upon the one tree, where their nests hang close together in fraternal concord, but is completely deficient in the gift of imitation. After the breeding season both species separate, and each flies in its own flock. The *Icterus xanthornus* Daud., or Plantain Bird, just as plentiful, also hangs its bag-like grass-blade nest on bush and tree: its abruptly ending note has something unusually soft and sad about it, while that of *Icterus icterocephalus* Daud. is only a twitter. The sweetest songster however was unquestionably a wren (*Tryothorus*) which also seeks the neighbourhood of man as keenly as the latter loves and cherishes it: an empty bottle, which is quickly usurped by the pretty singer for its quarters, is purposely hung here and there under the roofs of the galleries and porticoes. Its melodious note greets the earliest rays of the morning sun and accompanies it until it dips on the far horizon into the vasty deep. The little creature at the same time becomes so tame that it will come in through the open window of the study, and perching on the sill, warble its lovely little tune in front of the occupants. Here as elsewhere it is strange that Nature for some reason unknown to us should deny a beautiful voice to the birds it graces with a brilliant plumage, but grant it to those from whom it has withheld one.

244. Mrs. Arrindell having given me to understand that, for some time past, a pair of alligators were lurking in the draining trench immediately behind her fowl-coop, to the serious detriment of its occupants, not only my curiosity to watch these voracious gentry at close quarters but also my fondness for hunting would allow of no rest until I should lay the mischievous brutes in triumph at her feet. Cunning and cautious as they were I finally succeeded in outwitting both the thieves: they were *Alligator punctulatus* Spix. Neither of them was more than four feet but dowered with such a tenacity of life that it was long before we managed to kill them, although I had shot them both in the eye, and partic-

ularly to avoid damaging the skin had used ball cartridge. The negroes begged for the flesh: they considered it very delicate and tasty.

245. Among the domestic animals, I got a great surprise with the sheep which, in the small flocks that are kept on every estate for their mutton, I took to be goats: the wool changes completely into smooth and straight mohair, on which account they are shorn immediately after importation into the Colony so that at least one fleece may be secured.

246. In these glorious surroundings, in this dear and charming family, my five weeks' stay had flown quicker than a dream, when one morning my brother in company with a Mr. King, the Superintendent of the Barima and Essequibo Districts unexpectedly entered my room. They had come to fetch me for a short trip to Bartika Grove, a Mission Station on the Essequibo where my brother wanted to induce some of the coloured people living in the neighbourhood who had been with him as boat-hands on his previous journeys, to accompany him again to the mouth of the Orinoco. My most necessary things were quickly packed and within a few hours we were waving good-bye from the schooner to our friends ashore. The vessel my brother took advantage of was on her way to Bartika Grove to load granite and belonged to a countryman, Mr. Spamann who, after a forty years' residence in the Colony had earned a fairly considerably competency: unfortunately the poor fellow had lost his mother-tongue almost completely, for the way he spoke it was so broken that I should have taken him for anything but a German.

247. Facing like watchmen the twenty mile broad estuary of the Essequibo are the three large wooded islands of Leguan, Wakenaam and Tiger Island all of them decked with sugar estates. Leguan, stretching along the Eastern bank, is about twelve miles long, and contains 24 plantations: Wakenaam, off the Western shore, nine miles long and three broad, has 18 estates: Tiger Island with three plantations, is situate somewhat more to the Northward and is closer to the Western bank.

248. The commencing flood-tide carried us slowly up the proud stream along the channel between Wakenaam and Tiger Island until suddenly, at the Southern extremity of the latter, a regular island-archipelago spread itself before my astonished gaze. Following this, and divided by but a channel, is Parrot Island, while the 15-mile long Hog Island only cultivated at its Northern end, rather strings itself onto Wakenaam. To the East of Hog Island we find Fort Island (Large and Small) which, constituting the central point of the whole trade of the Colony during the times of Dutch occupation, is at present only occupied by a few coloured people who have erected their unassuming houses among and in the ruins of the proud fortress of former days. To the West of Hog Island, Great and Little Truly (Trouili) Islands are to be seen: they have received their name from the *Manicaria saccifera* Gärt., which the Colonists call Truly-Palm: a few estates are also situate on Great Truly. Closely connected with these two islands is a regular chain of smaller ones of which I only make mention of Buriabanalle, Kuketritte-kute, Large and Small Laulau as well as Mawuwekute. On the Eastern bank, on the other hand, near the Fort Islands, the most important are Knaepaluri, Kakatiri, and Quatte-banaba. It is only on the Western bank in its lower reaches that there flow into this

majestic river a number of small tributaries, amongst which the Capouye, Iteribisce, Supenaam, Arocari, Werri-werri, and Abenacari or Groote Creek are the most conspicuous.

249. We had to pass Large and Small Lulu (Laulau) Island before both banks of the Essequibo became visible in the far distance, though they still lay eight miles apart. As we ever kept in the middle of the stream, the dark edges of the smooth stretch of water let me have a good guess at the wealth of foliage, but not to distinguish the different sorts of genera and species composing it. It was only the palms, such as *Guilielma, Maximiliana, Oreodoxa* and the slender *Leopoldinia* vying with the boiler-house chimneys in their efforts to reach the skies, as they towered with their graceful crowns above the obscure fringe, that were distinguishable at a distance through their characteristic shapes of frond.

250. In the absence of any favourable wind we had to cast anchor with the commencing ebb and wait for the next flood-tide. The river here looked like some inland lake studded with numerous woody islands, because those situate behind were so closely packed together that the river mouth was completely hidden. A number of high chimneys that rose in isolated spots above the luxuriant growth of tropical forest, and indicated the creative hand of man, lent to the surrounding landscape an infinite charm, and at the same time a character which I have found peculiar only to the Essequibo: the thousands of parrots that towards sundown were flying over the water with deafening din from West to East further helped to improve it. Judging from the rank vegetation, the land here must be unusually fertile. We were able to resume our journey before daybreak, a little after which Mr. King, with a view to visiting certain of the settlements on the Eastern bank, left us for the corial which, as he had been expected, we soon saw being paddled towards us. Daybreak was greeted with the same flocks of parrots, which now flew over the stream from East to West probably looking to plunder fruit-trees anywhere in this direction of the compass.

251. The washing tide soon brought us to Itaka Creek which joins the Essequibo from the Eastward. The first rocks now appear. They belong to the primitive series, stretch unusually far into the river and at high flood are completely covered by the waves, for which reason a very experienced steersman is necessary to avoid all the dangers attendant on the passage of boats. Partly to avoid these, and partly also with a view to lunching with one of our captain's acquaintances, a timber merchant whose factory was already beckoning to us, in the far distance from off Saxically, a projecting rock on the Western bank, the schooner was turned in that direction. Mr. Moller received us in a most friendly fashion and we gladly let him persuade us to spend the night there. On resuming our journey next morning we found the stream narrowed to more than half on account of the Saxically rocks. The extraordinary sight of a 20 to 30 ft. high cliff projecting into the river immediately attracted our attention. It was a sandstone* full of magnetic iron with

---

*There is no sandstone at Saxically Pt. The rocks consist of pre-Cambrian gneiss. The banding is well-marked. Some of the bands consist of quartz and manganese oxide. They are extremely hard and resistant and form the cliff referred to. The land has been located as a manganese mine and prospecting operations have already (1919) been begun. (E.E.W.)

wavy strata, similar to Itabirite. In the immediate neighbourhood of this upright rising crag lay at the same time beds of sandstone that were tinged black and cemented by iron and manganese. Directly opposite the cliff on the Eastern bank the river Ampa flows into the Essequibo, the Indian Post (Sec. 191) of the same name lying in the close vicinity. Some six miles above Ampa several dangerous rocks again emerge above the surface, the "Three Brothers" and "Three Sisters," of which one has the exact shape of a huge head bobbing out of the water. As soon as we had turned our backs on the small unoccupied islands of Patta-pateima and Nai-kuripa, the cheery white house of Bartika Grove Mission already at a tolerable distance away smiled invitingly at us from out of the thick succulent foliage of plantains and coconut palms. My brother had told me that in Mr. Bernau the Missionary I would find a German and that a Prussian born. Our schooner soon cast anchor under the houses that had been built upon the rise, the boat paddled quickly to the landing-stage, and we were most heartily received and welcomed by a Silesian, Mr. Bernau and his wife.

252. Bartika Grove is the most important of the new Missions that I found in Guiana. It is maintained by the Episcopal Church, and was established and managed by Armstrong, an Englishman in 1833. He was succeeded by Missionary Youd who, inspired by an inward passion for the Ideal, was induced by my brother, after a short stay in Bartika Grove to shift the scene of his labours to the country of the Makusis where he founded Pirara Mission. As in the course of my journey I have still much more to say about this station, which at the same time was so full of promise, I propose postponing its short history until later.

253. Mr. Bernau who was educated in the mission schools of Basle and London, accepted the post of Missionary Youd, and has been labouring here now for some years. The mission numbers about some 110 residents, mostly coloured people. In Mr. Bernau I came to know not only an unusually industrious and extremely estimable teacher, but also a man who, thoroughly absorbed in his high calling, devotes to it his entire spiritual and bodily strength. Experience unfortunately has taught him that no field is to be found amongst the older generation where the seeds of true Christianity can be sewn with success: not the sort of Christianity that consists in just using the terms "God" or "Lord," but the kind that is blessed by inward correspondence with our thoughts, desires and actions, whereby we love God with our whole heart and soul and our neighbours as ourselves. A virile civilisation and obstacles of that nature, especially among the older folk, have opposed its propagation on such soil with the result that up till now all the efforts of the worthy man have remained without any lasting results.

254. When first established, several of the Indians accepted his invitation to settle down in the neighbourhood of the Mission, but this always lasted for only a short while, and their unquenchable thirst for an unfettered life soon drove them back into their forests; a bent for the most absolute self-will and their ingrained indolence, according to which they exert themselves physically only when urgent requirements demand it, and after its gratification regard any further labour as unnecessary—all these combined have unfortunately up to the present

made every such sacrificing effort ineffective. So long as the watchful eyes of the missionary rested on his grown-up scholars, he could find no more willing pupils: but hardly were he to turn his gaze aside, than what he had bidden them do was forgotten, the old inclinations again became their absolute masters, and one Indian disappeared after the other: indeed the prohibition about drinking spirituous liquors alone had already proved sufficient to drive them away. That the seed sewn by Messrs. Armstrong, Youd and Bernau has not been entirely destroyed however, is quite apparent from the fact that on Sundays certainly a number of visitors from settlements near and far are to be seen continually coming to church without any invitation just as unexpectedly as they take their departure when service is concluded.

255. When, after innumerable attempts, Mr. Bernau recognised that his sacrifices on behalf of the older generation were in vain, he exerted his utmost with the younger members and, in connection with the Mission, established a school for Indian children, especially for the orphans whom he gathered from among the different tribes. At the time of my first visit the number of little brown protégés had amounted to 50, by whom he as well as his wife, were most dearly loved. Every year the zealous missionary takes a trip among the different tribes, with the object of inducing the parents to trust him with their children of any age, but he only rarely succeeds in doing this because the Indians, especially the mothers, are exceedingly fond of their youngsters and look upon them, especially the girls, as little "helps" for the household. If orphans whose support falls upon the relatives are found in a settlement they are in most cases readily and freely handed over to him. The success with which Mr. Bernau's noble efforts have been crowned, borders on the marvellous, and one might search Germany in vain for a school where the pupils pick up with equal ease and rapidity that which is brought before their juvenile understanding, and where, particularly in so short a time, the scholars learn to count or speak or to read and write a foreign language like these little brownies do their English. One little Carib boy learnt to read and write readily within four months; another, of the Akawai tribe, within fourteen months managed to reckon up to the Rule of Three. The little pupils had also made most striking progress in singing and I shall never forget the impression which their soft pleasing voices made on me. Two teachers assist Mr. Bernau with the boys, and a governess helps Mrs. Bernau with the woman's work and in minding the little kiddies, some of whom are not yet two years of age.

256. Besides school-work, the boys are taught all kinds of manual labour, in which Mr. Bernau himself shows unusual skill. When the boys are confirmed, those who desire and are fit for a trade are apprenticed to a master. If any show the necessary abilities for teaching, the Mission itself affords opportunity for such a training, so that later on they may act as teachers amongst their own people. The girls are also either trained as teachers or else sent to the best families in Georgetown as servants.

257. As soon as a child is handed over to Mr. Bernau, it is no more permitted to visit its parents in their village but on the other hand they can come to the Institution whenever they wish and stay as long as they

like. With this object in view he has had a large house built where the parents can reside during their stay.

258. The Boys' Home is large and roomy and serves at the same time as Church which, like the Girls' Home, is still under construction. The boys' clothes consisted of a multi-coloured striped shirt, white trousers, white jacket, and small straw hat.

259. As my brother was anxious to reach by afternoon the colony of coloured folk at Cartabo Point where he had recruited his former hands, Mr. Bernau was kind enough to lend us his own boat with which his strongest pupils were to take us to Cartabo Land-spit which separates the Mazaruni and Cuyuni, before they fall into the Essequibo.

260. Under the regulated stroke of our young paddlers we speedily made our way to the estuary, quite a mile wide, of the Mazaruni and Cuyuni Rivers which, about eight miles south of this common mouth join into a single stream. Swift as an arrow we rushed along past the thickly-timbered Eastern shore until the sudden advance of night enveloped everything in darkness and allowed me only sufficient time to recognise in the glorious carpet of flowers *Petrea, Combretum, Schousboea, Securidaca*, several *Passiflora* and *Echites*, as well as many a flourishing *Malpighia, Clusia, Mimosa*, and *Melastoma*, while the large blossoms of *Carolinea princeps* showed up bright and brilliant through the thick underwood. On our journey up the Essequibo we had kept as much as possible in the middle of the stream, so that I could only admire the luxuriant insular and riparian growth as thick masses of foliage. It was already quite dark when we reached Cartabo Point, where we did not find those whom we were looking for. However worrying this must have been, my brother nevertheless felt pretty confident that all his former hands would come to Georgetown directly they heard that he had returned to South America and required their services again.

261. The evening having become unusually dark and stormy, we determined to spend the night at Cartabo and return to Bartika first thing on the following morning. The obliging and friendly coloured folk supplied us with hammocks and, though not asked, cleared out a house for our night's quarters, the paddlers preferring the benches and ground spaces. We were up and about by break of day, which gave me an opportunity of having a look over the whole settlement and its occupants.

262. The large number of coloured people who inhabit the Essequibo and Mazaruni are mostly descendants of Europeans, negroes, and Indians, all belong to the Established Church, and generally stand on a higher plane of civilisation than the surrounding Indians. They are the purveyors for the most part of the dried fish supplied to the city, just as they are the builders of the punts, lighters and corials used on the estates, in the manufacture of which they develop unusual skill. In not too stormy weather, one can even trust oneself at sea in these boats. There is an historical reason for the settlement of this isolated coloured colony here at the junction of the three rivers. In the year 1738 some 40 odd creole slaves on the possessions of the Dutch Company banded themselves together, secretly left their estates and fled to the Cuyuni where they settled on an island that is still called Creole

Island, cultivated some land, and at the same time intrenched themselves fairly strongly. The news naturally had a disquieting effect upon the Governor and plantation-owners as it was feared that the example taken might be repeatedly followed. These fears were further increased when the runaways, in their presumption, went so far as to inform the Governor through some Indians that if he wanted to make slaves of them again he must come and fetch them not only with the whole of his forces but with those of Holland as well, and that they were accordingly awaiting him with confidence in the firm conviction of seeing the attempt on his part completely frustrated. The Governor recognised their advantageous position and at the same time all the difficulties to be encountered in the way of successful attack: he therefore deemed it far better to conclude a favourable treaty than to put to a test the uncertain fortunes of war. A certain Peter Tollenaar, a mulatto, was despatched, unarmed, for the purpose of discussing peace-terms with them on the following lines: if they did not extend their raids into the Colony but worked every second month for it, and at the same time gave an assurance not to entice away any more slaves, the Governor would give them and their descendants their freedom. Peter Tollenaar was successful in his efforts on behalf of peace and from that time up to Emancipation this free and coloured population continued its existence. To prevent their children falling back into slavery, the men were at first allowed to marry only free Indian women.

263. We soon reached Bartika Grove again, but left it by next morning in spite of the entreaties of brave Bernau, who wanted us to stay a few days longer. As the schooner had not yet taken in her cargo, we accepted most cordially and gratefully our countryman's offer to get us to Zeelandia in his own boat and with the aid of his youthful but expert paddlers. With heartiest good wishes for a successful journey to the Orinoco, and the promise on our part to spend a few days with him on our return down the Cuyuni, as was my brother's intention, we left the Mission and its friendly inmates.

264. The strength of the ebb that had now set in, as well as the strenuous and skilled help of our indefatigable crew, let the boat skim over the waves as swiftly as an arrow while with lively interest I watched the youngish paddlers whose eyes and ears kept ever on the alert to see the smallest object, to hear the slightest noise. In spite of the rapidity with which we sped, they nevertheless noted every fish that was swimming down there in the water round about the boat, as well as every bird that the close branches of the trees along the banks were hiding, and if they heard the note of such a feathered creature, or the cry of some mammal in the forest, I immediately learnt the name of the guilty party. One could tell at once the new inmates who only recently had been received in the Institution by the deep melancholy which was inwardly awakened by these scenes and stamped a definite mark upon their faces. The remembrance of their forests, of their free unfettered life, the recollection of the playing-grounds for their childish sports, had chased away every smile, every sign of Life from their boyish features. Taciturn and self-centred there they sat in front of us: they certainly cast their languishing gaze at the objects that were arousing their com-

panions' interest—but not a sound passed their lips—and in silence they continued to paddle on. Although the majority are quite conversant with the English language they nevertheless prefer to seize the opportunity of conversing in their mother-tongue, for which reason the members of one and the same tribe at the Institution always keep together as much as possible.

265. As the sun was already beginning to slip behind the tree-tops and some houses were noticed along the bank, we determined on putting in there for the night. We were received on landing with the tempestuous howl of several dogs that fairly threatened to tear us to pieces. The less satisfied we were with their overtures the more gratified were we over the friendly welcome of the dear young coloured woman who immediately gave up her sitting-room for us to sling our hammocks in. The husband was a boatbuilder and the workshop therefore the best camp for our crew who were especially delighted because my brother had promised to reward them for their strenuous exertions with the ham that was still left amongst the provisions brought from Georgetown. He accordingly sent one of the boys down to the boat to fetch it from his servant. The boy took the opportunity of bringing, in addition to the ham, some bread and rice, and at the same time his own hammock which, when he got near the shed, he thought it wiser to sling before the others had time to pick the best places. He therefore put the ham on a piece of timber and tied the hammock. This done, he proposed carrying out his orders, but what he looked for had disappeared: the servant following him of course must have taken the ham to the cook—the only consolation that was left him. But the latter had done no such thing:—the ham and bread were gone, and the rice spilt on the ground, showing clearly enough that the dogs, now quiet, had just devoured it. How mad both we and the boys were can well be imagined! In spite of their mistress calling them, and notwithstanding every search of the disappointed lads who gladly would have saved at least a piece, the thieves were neither to be brought back, nor discovered. In the course of half an hour the brutes returned, licking their greasy snouts. The thieving instinct of the Indian dogs is greater by far than that of our cats: the meat in the cooking pots, indeed the whole pot on the fire is not safe from them, and only the most extreme caution saves anything eatable from their lust for theft, as we subsequently learnt on many an occasion by experience.

266. The dainty dish had disappeared and rice boiled in water had to take its place: owing to the young woman being kept on such short commons that she was unable in the morning to give us a single piece of cassava for the journey, we had to resume our voyage with empty stomachs, but yet with the certainty of finding along the bank during the course of the day a store kept by a coloured man who dealt in bread and provisions.

267. Comforted and consoled with this reflexion we made a start—but as the hour went by when the healthy appetites of the boys were accustomed to be satisfied with breakfast, their strength and exertions also slackened. Yet however plainly their hunger manifested itself in their faces, not a complaint, not a murmur passed their lips. But what a shock when we reached the place we had depended on and the peevish

store-keeper informed us that he had not a bite of bread in the house! The little bit of heart that so far had been left now indeed failed us, as was to be recognised only too clearly in the diminished progress of the boat. In addition to this, the weather had changed considerably for the worse, the Essequibo soon rising into such a state of commotion that neither the boat nor the relaxed strengh of the crew was a match for it. In these critical circumstances there still remained a solitary star of hope, the Mission Station of Caria-Caria situate on the left bank: this was run by Mr. Peters a coloured man who nevertheless was neither a clergyman nor real missionary. The renewed prospect of a square meal made the boys take heart again and the boat's bow was quickly turned on her new course. We had not paddled far when we noticed a canoe ahead with which we soon caught up. It was paddled by two Indians who had come from the forest where they had been collecting fruit. I never however had seen so frail a vessel, and the two naked individuals whose black hair hung down over their shoulders like cloaks must indeed have been very tired of life to have risked it in a nut-shell so riddled with holes.

268. There is no need to describe how greedily the boys fixed their eyes on the *Astrocaryum* and *Bactris* fruits, and yet my brother hesitated before gratifying their covetous desires because the Indians would not part with any of their provisions except for spirits. After a long delay and before we had even spoken a word, the sad pleading looks that the youngsters exchanged from between the food and his eyes to read in them what he intended doing finally prevailed, and a glass of rum received by each of the Indians brought a portion of the fruit into our boat. Though one found but little to still one's hunger with, the thin fleshy envelope of the fruit was however gnawed by the boys and us with as much inward satisfaction as if we had had the best of roast beef in front of our expectant mouths. The opening of the Albany-cary (Abenacari) on which the station lies, was finally reached and we were about to spring ashore when an Indian woman, partly in a few English words, and partly in a much more intelligible dumb-show, because none of the boys understood Arawak, gave us to understand that there was just as little of Mr. Peters here as there was bread. The last sparks of hope were now extinguished, and the boys' countenances already naturally marked by melancholy changed into that of absolute despair and found a striking reflex in our own, because we also were suffering the torments of nagging hunger, particularly aggravated in my own case, as the eating of the palm-fruits had made me vomit badly.

269. In spite of our pantomimic request there was nothing edible to be got out of the woman and we were forced therefore to continue our journey, but the sight of a boat that was rowing towards us soon recalled to life the hopes that were already moribund, and the shout of "Mr. Peters" by one of the boys redoubled their strength. Mr. Peters gave us the most friendly welcome, bid us turn our boat and accompany him to his place where a big basket of fresh cassava-bread and a large vessel of cooling lemonade soon made us forget our hours of hunger.

270. Whether the woman had misunderstood, or purposely wanted to deceive us, I don't know,—the satisfaction of gratifying our appetites

did not permit of further enquiry into the matter: it was quite sufficient that a coloured baker lived here to supply us with plenty of bread. The Mission consisted of 40 houses and about 100 residents, partly coloured people, partly Arawak Indians, who out of their own funds had built quite a pretty chapel. Mr. Peters belonged to one of the Dissenting bodies and therefore received no support from the Established Church. The Indians were all clothed and distinguished themselves to advantage from the coloured people, particularly in their beautiful long hair.

271. Still desirous of reaching Zeelandia to-day, we were only able to make a short stay at Caria-Caria. The boys were apparently exhausted, and as the lower portion of the estuary of the Essequibo required double strength, my brother considered it advisable to accept Mr. Peters's offer of taking his boat, and letting the youngsters return to Bartika Grove. After giving full supplies of provisions to these nice boys, they returned to Bartika, and we to Zeelandia. It was indeed a stroke of luck that we had taken a larger boat and stronger pullers because towards evening the weather again became so boisterous that our former craft and paddlers would never have been able to stand it: even as it was, the violence of the waves, their fury still further increased by the rising flood, forced us to seek shelter on Truly Island at one of the coffee plantations where we were heartily welcomed. In spite of remonstrance our pullers returned to Caria-Caria during the night so as not to miss next day's Divine Service, the manager supplying us with a boat and reliable crew on the following morning.

272. We landed all right at Zeelandia by mid-day, stayed here until the Thursday and then, in company with Mrs. Arrindell and Miss Ross who wanted to spend a short time in the city, travelled in the estate's schooner to Georgetown which we luckily reached by evening, so as now to complete all the preparations for the First Expedition to the estuary of the Orinoco, my brother having instructions to start his labours with the mapping of the western boundaries.

273. My brother had already engaged a portion of his boats' crew during my stay at Zeelandia and now from day to day was awaiting the remainder from Essequibo. The large corial which the Expedition had purchased and christened "Victoria" bid fair to fulfil all the hopes which one had set upon her durability and lightness. Cut out of one single trunk it was 43 feet long, its breadth being considerably increased by the planking along its edge. All roads cease beyond the cultivated areas of the colony where the impenetrable virgin forest still keeps absolute sovereignty. Overland journeys across impassable swamps would be Quixotic, and so the rivers remain the only means whereby the traveller can make his way into the interior.

274. A second corial was still wanted but, not managing to buy any, my brother was forced to hire one. To maintain the strictest discipline, the Governor appointed my brother a Magistrate until his return to Georgetown, so that he could punish by fine, forced labour, reduction of the daily rum, tobacco, or ration allowance, any subordinate disobeying his own written instructions or orders of the senior officers of the Expedition. The last-named punishment proved the most effectual for the negroes. After my brother had filled the number of his crew, I had a look

around to get some assistance for myself: this I soon found in my old acquaintance, Stöckle, the honest Wurtemberger. In addition, a few days later, I engaged a small sprightly lad who gave me to understand he belonged to Halle whence with his parents and two brothers he had come to Demerara before us: the poor people had previously worked on a coffee estate, from which however yellow fever had driven them to the city to earn their livelihood. The few days still remaining before taking our departure, I spent in teaching both my subservient geniuses Stöckle and Florenz something about skinning birds and mammals, as well as preparing other objects.

275. Although the wages of these two very considerably reduced my fixed salary, which owing to my sickness, had already become a minus quantity, I could have barely carried out half my instructions without their assistance. As already mentioned Dr. Echlin took the place of Walton the artist who had become home-sick, while Mr. Superintendent King who was in charge of the Barima and Waini Rivers District, received orders from the Governor to join us so that through his mediation my brother should be rendered every possible assistance on the part of the Indians.

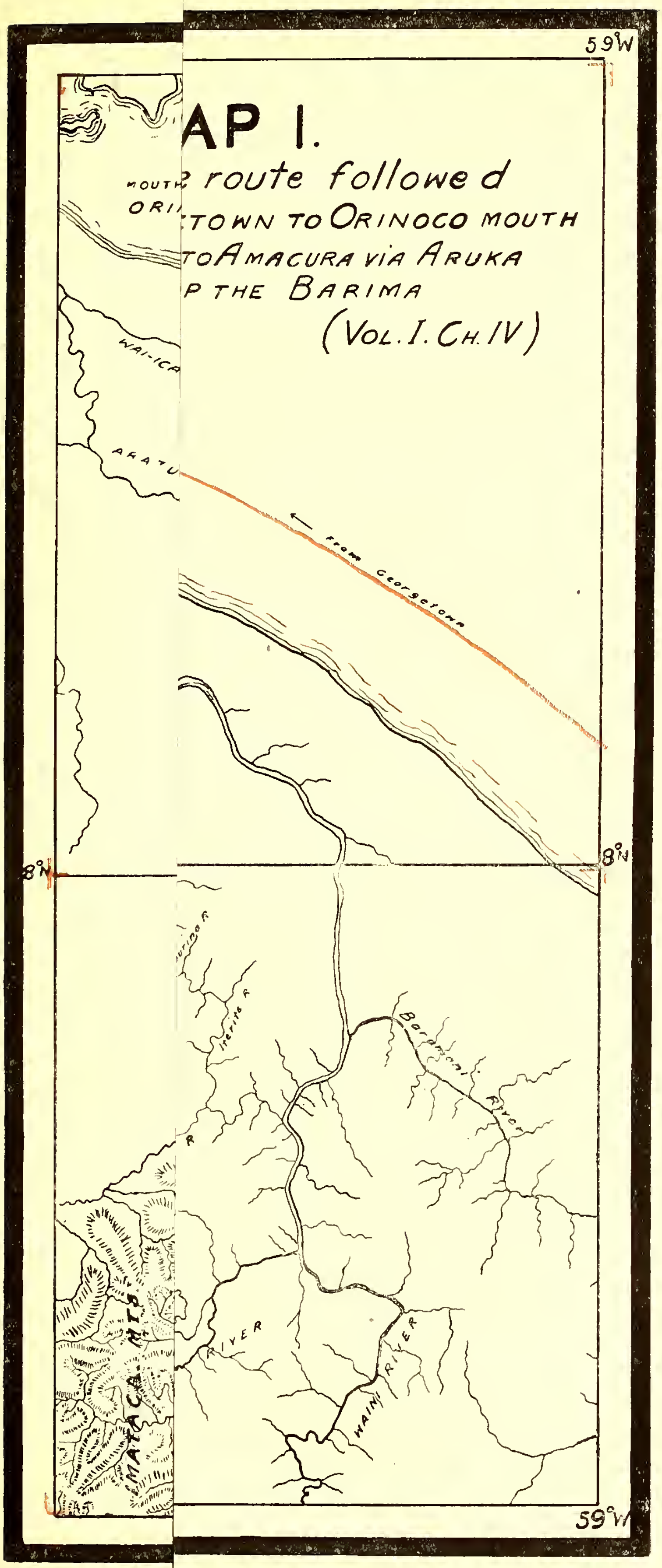
CHAPTER IV.

Expedition to the mouth of the Orinoco—Mouth of the Waini—Sandbank—Mora—Barima—Warraus—Cumaka village and its environs—Commencement of the rainy season—First trip to the virgin forest—Chigoes—Bête rouge—Mouth of the Barima and Orinoco—Return to Cumaka—Habits of the Sloth—Arawak chief Caberalli—River Aruka—Amacura—Religious Beliefs, Manners and Customs of the Warraus—Journey up the Barima—Flora and Fauna of the river basin—Akawais—First appearance of primitive rocks.

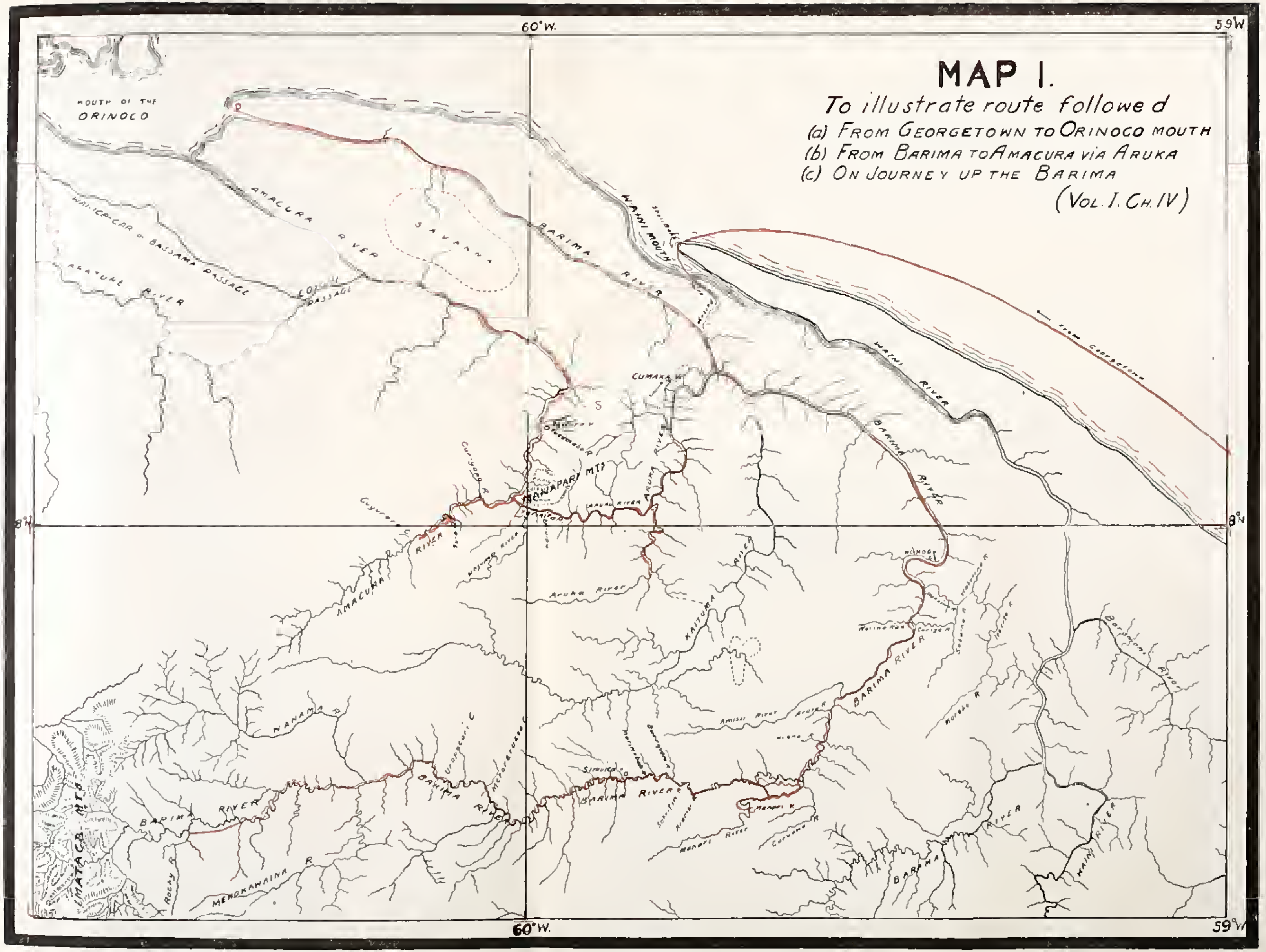
276. Thus the day of departure ever drew nearer and kept us all the more occupied as we still had many a thing to think of, and much to worry over that we had postponed to the very last moment. While my brother purchased what he wanted wholesale, I had to get mine retail when, like a prudent housekeeper, I never dared let out of my sight my working capital that had dwindled down to a minus quantity:—and yet in this noisy excitement, in the continual dread of having forgotten this or that, there was something at the same time so satisfactory and stimulating that it is still a pleasure to call to mind those days replete with petty worries, unnecessary doubts, and fallacious hopes. But it was all due to the fact of its being my first journey to the interior of a country that already in its civilised portion had opened quite a new world to me.

277. The whole of the preparations were finally completed and all purchases effected. Cases and boxes filled with peas, rice, potatoes, coffee, sugar, and some North American hams: others with guns, powder and shot, coloured print, and salempore (a blue light cloth), with knives of all sizes, looking-glasses, beads of different colours, fish-hooks, combs, scissors, needles and pins: barrels and kegs with North American saltfish, pickled beef and pork, vinegar, rum and spirits as well as a few bottles of wine—everything was ready and waiting to be put on board the big schooner "Home" which had to take us to the mouth of the Waini or Guiania in the Atlantic Ocean. Owing to our lodgings up to the present being fairly distant from the landing-stage, the transporting did not progress as quickly as my impatience could have wished, until it came to an end with the last of the astronomical instruments.

278. Morning of the 19th April broke on the whole of our crew, now in their neat and clean broad white linen trousers and jackets with red facings and red sashes, who were assembled in front of our house, the inside of which since the first streak of daylight had become the rendezvous of all our friends and acquaintances. There was plenty of joking and chaffing about the deeds of heroism that were promised and adventures already experienced in advance, while warnings were offered gratis as regards accidents to come. As a matter of fact, bets were made on the success or non-success of the Expedition or on the execution of this or that particular portion of it, for they could not resist their love of betting even where the future of their friends and associates was in question.


59°W
AP I.
e route followed
TOWN TO ORINOCO MOUTH
TO AMACURA VIA ARUKA
P THE BARIMA
(Vol. I. Ch. IV)
MOUTH
ORI
WAI-ICA
ARATU
from Georgetown
8°N
8°N
urino R
Iterito R
Baramani River
R
RIVER
RIVER
WAINI
MATACA MTS
59°W

V. ROTH, del.



MAP I.

To illustrate route followed
(a) From Georgetown to Orinoco mouth
(b) From Barima to Amacura via Aruka
(c) On journey up the Barima
(Vol. I. Ch. IV)

60° W.
59° W.
8° N.
8° N.
Mouth of the Orinoco
Amacura River
Waini-Car or Bassama Passage
Arature River
Coriu Passage
Savanna
Barima River
Waini Mouth
Waini River
← from Georgetown
Cumaka
Manapari Mts
Aruka River
Amacura River
Kaituma River
Barima River
Nanama R
Menokawaina R
Rocky R
Imataca Mts
Manari River
Amisai River
Baramá River
Waini River
Barama River
Barima River
Aruka River

V ROTH, del.

279. But while the best of humour prevailed inside the house, quite different feelings were being expressed outside it. My brother's boats' crew consisted almost entirely of married coloured men and negroes, and although the proposed line of route was planned for but a few months, a number of disquieting rumours relative to the hostile attitude of the Venezuelans towards the Expedition had given rise to so general a panic that the poor women already saw their men for the last time. With the most woeful expostulations they individually and collectively tried to soften their hard-hearted husbands and get them to turn back while there was still time, and not leave them and their unfortunate children in distress: but they, leaning on their oars painted in various colours, either manfully withstood all tears, entreaties, and prayers, or else interpolated some coarse expression during a momentary lull in the squalling tumult, at the same time looking very anxious to get away, while my genial South German, Stöckle, started pitying the poor wives and tried comforting the children. The heart of my little boy from Halle also seemed to have become too heavy, because he looked at me with eyes very far from as saucy as they were before.

280 It was already noon when in the company of our friends and a large concourse of people we stepped on board the schooner where we found all cases and barrels stowed away, and the two large corials wherein we were subsequently to continue our journey by river well protected on the deck. With the firing of our ship's cannons and the repeated hurrahs of the crowds collected on shore, the anchor was weighed and the sails hoisted.

281. Thanks to a favourable wind blowing, the city with its envelope of palms soon disappeared from view: it was only the Lighthouse Tower that delayed it with its good-bye, until that also followed, when at last the fruitful stretch of country, the "Arabian" coast, brightened with the setting sun, emerged before us in the azure distance and bade us welcome. The sudden onset of darkness deprived us only too quickly of this glorious sight. The name "Arabian" coast is a corruption of Arowabiecie, the term which the Arawak Indians apply to a small species of tiger-cat, which is said to have been very plentiful here formerly. On the other hand it is maintained that the word is a corruption of the Caribbean Coast, the Caribs having occupied this territory in large numbers.

282. Although our voyage along this coast had commenced so auspiciously, it became all the more stormy with nightfall: a rough evening was only to be expected from the black threatening thunder-clouds that already before sundown had towered over the distant ocean-horizon. The awful tempest burst of a sudden with a fury that our vessel could not face. As if storming at the very gates of heaven, the waves with their sharp-defined edges, momentarily illumined by a dazzling flash of lightning, soon made her the playball of their fancy and the pilot frankly admitted that he no longer knew his bearings:—a huge shock succeeded by a shaking of the vessel told us in short that we were stuck fast upon a sandbank. The storm and savage struggle of the elements fortunately abated after a while, to be followed by a strikingly contrasted calm which our schooner quite comfortably shared, for she could now ride peacefully at anchor.

283. What the gloomy night had mercifully hid, what the storm and excited waves had stunned, we discovered at break of day: the whole of the expedition suffered the pangs of sea-sickness. Firmly chained to the sandbank we had to remain lying here until one o'clock in the afternoon, when we were only released without further accident from our involuntary standstill with the returning flood.

284. The Arabian Coast along which we now made our way consists, like the whole stretch of coast-line in general, of alluvial land which forms on its decomposition an exceedingly fruitful soil. This is luxuriantly overgrown with the glistening *Rhizophora Mangle, Avicennia nitida* and *tomentosa* as well as with *Laguncularia racemosa* and *Conocarpus erectus* Jacq. which with their refreshingly bright green foliage provide an extremely pleasant fringe to the flat coast-line, but at the same time contribute a very great deal to its unhealthiness owing to their peculiar root-branches for the most part being raised above the surface: the two former block and retain in their labyrinthine ramifications much of the detritus brought down by the rivers and deposited on the coast by the tide, where they fairly poison the air with their decaying decomposition.

285. In spite of this harmful influence, the ever fresh green of these bushes gives the extensive flat lands a really delightful charm, which is still further increased by the many mingled-coloured flocks of red ibis, white egret, rosy-red spoon-bill and beautiful proud flamingo as well as by numbers of other water birds: it is the loveliest edge for the rich carpet unrolling itself behind. With incoming flood and at eve the countless feathered hosts fly back with dire discordant din to the green-leaved coastal bushes and trees, to wait there for the ebb tide or for the dawn: it is extraordinary that the different genera then keep completely separate from one another.

286. On the afternoon of 21st April we reached the mouth of the Waini and after landing our baggage on a large bank composed of sand and shell fragments heaped up by the waves, and sending the schooner back to Georgetown, started to pitch our tent: this was easier said than done because none of the tent-posts would hold in the soil which was loose and constantly giving way.

287. After satisfying my most necessary requirements, I commenced to examine more carefully the composition of our shifting plot of ground. The extensive elongate bank consisted, as just mentioned, of an accumulation of sand, shell, and shell fragments which the powerful current had collected here: the molluscs themselves however had got lost, already probably on their involuntary journey. Although the real native country of many of these snails and shells was the Indian Ocean, the Senegal, China and the South Seas, they must nevertheless also be forthcoming on some as yet unknown stretch of the Atlantic Ocean, because the current could not have brought them from these situations here. Thus I found: *Marginella coerulescens* Lam., *Natica marochiensis* Lam., *Buccinum Miga* Adans., *Dolium fasciatum* Lam., *Nucula rostrata*, *Fusus Morio* Lam., *Pyrula melongena* Lam., *Purpura cataracta* Lam.

288. It often happens that a resident of the coast when looking of a morning for some such sandbank upon which perhaps only the day be-

fore he was enjoying a view of the raging turmoil—no longer sees it. These banks generally disappear just as quickly as they develop, or their previous contour becomes altered so strikingly that one does not recognise them again in their altered condition. With the incoming flood, the blustering surf seemed as if it likewise wanted to attempt similar changes upon our perishable abode, a cause for anxiety to which was soon added the torments of an intolerable heat, because no tree, not even a shrub, protected us from the scorching and fiery sunshine, that rendered even the inside of the tent insufferable. Fortunately at least we were saved the terrors of mosquitoes because every attempted attack of theirs was repulsed by that true ally of ours, the sea breeze.

289. According to my brother's arrangements we were to remain here until he had fixed the geographical situation of this spot as accurately as possible: at the same time in conjunction with Mr. Glascott he wanted to learn how far the bed of the Waini might be navigable.

290. The sandbank offered nothing but a countless supply of water-birds which, hastening here in swarms of thousands from the coast during the ebb, and surprised at our unexpected visit, settled down on the far water-side. Amongst them were the glorious flamingoes which already at a fair distance away might mislead one into thinking a company of English soldiers was on the march along the shore. Hundreds of rose-red spoon-bills (*Platalea Ajaia* Linn.) lustful for robbery but keeping us all the time in view, were wading through the shallow water-holes: associated with these and taking similar precautions were long rows of *Ardea leucogaster* Wagl., *A. nivea* Lath., *A. leuce* Ill., and *A. coerulescens* Lath., as well as dense crowds of sand-pipers, and snipe (*Charadrius, Numenius, Scolopax*). Outside of these lines the greatest varieties of duck were rocking themselves on the shapely curved rollers of the lightly moving surf, while enormous processions of scissor-bill (*Rhynchops*) in close rank, flew slowly along immediately above the surface and ploughed up the water with their peculiarly constructed beaks. With a shot putting an end to these brisk activities the deafening cackle, scream and chatter suddenly subsided, whereupon the trees and shrubs along the shore became temporarily covered with blossoms that were foreign to them. For hours together I used to watch this ever changing struggle, the watchword of which is a continual feud and strife between and among the different genera: it was only the fear of my gun that was able to ensure a short armistice which even the red ibis and white egret when put to rout wilfully misunderstood. It was peculiar never to see the young birds of the former species flying with the older ones, but in their own separate flocks, as could be recognised already at a distance, because the grey feathers of the youngster only changes into the fiery red of the adult during the course of the third year. The flesh of the young bird being extremely tasty, it continually served as a target for our guns.

291. Though our table was so richly supplied with feathered game, we never at any time managed to combine it with any nice fish, for when we threw out our lines we generally caught nothing. The *Anableps tetrophthalmus* ("Four-eye") of but little taste, was the only fish that more than tried to replace this want. It swarms in such immense shoals along the whole coast and banks that when overtaken by

the outgoing tide large numbers are left stranded behind on the flats, whence they make long skips to try and reach the waters' edge now more and more receding: it is when they are endeavouring to do this that a considerable number of the flying crowd are caught. I have never met with the fish in streams beyond the limits of salt water.

292. Our initial superabundance of fresh meat had however soon to give way to appreciable want, because our never satisfied love of sport and spoil had made the feathered visitors to the bank so shy that it only wanted someone to show himself outside the tent to scare them back to the main. The tribute which they were no longer willing to pay carelessly and unstintedly had accordingly to be obtained surreptitiously by guile. As soon as the ebb set in, our boats' crews hurried down to the beach with spades and shovels, to dig trenches where we regularly took up our position and whence we welcomed with a shower of shot the hungry guests as they approached. Had it not been for unexpected and speedy help it is certain that I could easily have lost my life at one of these hunting shelters.

293. With one exception, all the genera and species comprising our visitors had already given me a contribution for my collection: what I still missed was the glorious flamingo (*Phoenicopterus ruber*) which in spite of every trick resorted to, never came within shot. Every recent unsuccessful attempt had made me all the more determined not to rest until I had succeeded in gaining possession of this obstinate bird also. As the boats' crews were mostly busy in other ways of a morning, it was generally at this time that I used to slink away by myself to one of the trenches, where, often waiting in vain for hours at a time my patience would finally give way, and another bird have to do penance. And so to-day after having lain in ambush for several hours—what with the flood tide soon getting in and not wanting to come back empty-handed—I turned my gun on a red ibis which, only being winged, now fluttered along the mud out towards the sea. Heedless, yet anxious to secure my catch, I hurried after it, but with every step sank deeper into the mire, until at last, unable to get forwards or backwards and fatigued with the exertion of trying to extricate myself, my position became still more desperate because it was soon before I could no longer use my arms. With all my remaining strength I shouted for help, a call that was fortunately heard and followed as quickly as possible by one of the boat's crew, a negro. Directly he recognised my awful plight, he threw himself flat on the mud, and by winding and twisting his body sinuously along he edged himself towards me in a curious fashion without supporting himself on his hands save to a very slight extent. Though my own situation was dangerous enough, my attention and interest was so absorbed in this well-considered manoeuvre that I thought no more about myself until seized by my smart rescuer who, with similar twists and contortions, dragged me out of the mud-bath. On recognising the cause of my plight and spotting the ibis which, fluttering in the meantime still farther out to sea, had got stuck in similar fashion, my rescuer, tempted by the delicate morsel, proceeded to fetch it: he threw himself on his stomach as before, and with the bird as a reward for his trouble, he returned to his tent, laughing all the way.

294. In addition to the terrible heat of the sun to which we were continually exposed and which so raised the temperature of the sand and shell that we could hardly walk or stand on it until the afternoon, we had been troubled now for some days past with the oppressive want of fresh water. Owing to the action of the washing tide upon the river waters we could only remedy this from a considerable distance: the boat that we had despatched had but found it first in the Aruka, a tributary of the Barima.* The enquiries concerning the navigability of the Waini did not by any means come up to our expectations, because the mouth even at the flood, only shows from 12 to 18 feet, a depth which is of course considerably increased farther up the stream. The sand-bank lay in 8° 24′ 46″ lat. N. and 59° 36′ long. W.†

295. Having, for some days past now, made the very most of our little plot of ground from a natural history aspect, and the want of water making it advisable from another point of view to get rid of those of its consumers who were not required, it was arranged that all members of the boats' crews who were not wanted for the coastal survey, should be despatched ahead in one of the large corials to Cumaka, a settlement of the Warrau Indians on the bank of the Aruka. Mr. King was appointed leader, to make necessary arrangements for setting up the second station there: I gladly joined him for during the last few days I had been walking on pins and needles, and the dark distant forest was temptingly inviting me to come.

296. Thus on the 27th April our small party left the barren shell-bank that now proved of no further use to me, and hastened to the fresh luxuriant green, to the forests that were so plenteously and variously tenanted.

297. Owing to the sea-like expanse of the Waini estuary our late residence with its swaying flag-staff remained visible for a long while, until by paddling strongly we reached the spot where on the Western bank of the river, apparently at right angles to it, there branches off one of those curious natural canals which, as I only learnt later, are so peculiarly characteristic of this extensive stretch of coast. The Mora Creek (Marowan of the Indians) as the Colonists call this junction canal, although not quite navigable for sailing vessels, nevertheless offers to smaller sized craft the most convenient waterway between the Barima and the Waini, because at its branching-off from the latter it has a depth of 16 feet and a width of 116.‡

298. Our hitherto smoothly-going trip was suddenly upset by the commencing flood, which at first drove its waters with such force up the broad Waini mouth and up the Mora Creek, that the steersman (cap-

---

* When the party was on the sand-bank and sent to the Aruka for fresh water it must have evidently been to the Mabaruma Creek that they went, half a mile up the Aruka on its left bank, where the Morawhanna people of the present day still have to go for their drinking water during the dry weather. (V.R.)

† I located the position of his sand-bank " at Waini mouth " on the modern map and find that the spot is now far out to sea and a few miles to the east of the river mouth. (V.R.)

‡The depth of the Waini at its bar remains about the same, but of course the Mora Passage has considerably widened and is navigable for moderate sized steamers, although some folk still living remember when a sloop had difficulty in navigating it on account of the number of trees scattered all over the place. The Barima end of the passage has widened considerably even within the last three years (V.R.)

tain) had to exercise all his powers and attention to avoid being jambed against the huge trees that in certain places rose out of the water in unexpected confusion: dangers that were still further augmented by the winding course of the channel. When the ebb set in the same effects were produced, but in a reverse direction, as the banked-up mass of water receded at a very considerably increased speed. By his skill and care our captain had fortunately evaded the dangers of the flood, but on the other hand it was only with the very greatest exertion that the strong arms of the crew were able to withstand the might of the falling ebb. The best thing always to be done is to wait until the first force of the on-coming ebb has spent itself. Large flocks of young ibis—they had probably been hatched here—were perched upon the shady foliage trees of the bank and induced us, like prudent housekeepers, to select some of them for supper: this nevertheless proved more difficult than we expected, because they always let us come within gun-shot but then flew away to settle again some hundred paces distant. It might have been quite an hour that they had been thus driven ahead before we succeeded in our purpose. At the same time I discovered in the thick leafy canopy of a tree a snake-neck bird (*Plotus Anhinga* Linn.) which seemed to be taking a comfortable rest, but soon after lay at my feet in the corial.

299. Fortunately and without further hindrance we reached the exit of the channel in the Barima, which proved to be a much considerably larger stream than I had even the remotest idea of, as its breadth amounted to at least 700 feet with a depth of 18 to 24 feet. The effects of the commencing flood-tide upon its dark waves was just as distinctly perceptible as it was on the Mora. The banks are quite as low and swampy as those of the Mora, and we looked in vain for a secure and dry little spot at which to land. But what was there to worry over? In front and close at hand the most luxuriant tropical vegetation was disclosed, and I stood before the portals of a world of wonders of the novelty and wealth of which I had never even dreamed.

300. Though the banks of the Mora had already claimed my entire interest, this was nevertheless very much more increased by those of the Barima. The loveliest palms, *Euterpe oleracea* Mart., *Manicaria saccifera* Gaert., stretched their proud fronds up above the dark succulent mass of foliage, and vied with the slender *Leopoldinia pulchra* Mart., both in beauty of growth and formation of leaf, while the precious *Vanilla aromatica* Sw. (*V. guianensis* Splitg.) wound itself in thick garlands up their slim shafts and trunks, and together with the most beautiful *Begonias* and *Passiflora* followed the lank columns in a most variously-coloured mixture, until they finally reached the crowns to form fairy-like draperies. Meanwhile the lovely *Allamanda Aubletii* Pohl. and *Ruyschia Surubea* Sw., covered the brushwood on the banks with their large yellow and red blossoms, and the pretty *Oncidium Baueri* Lindl. with yellow stalks, forced by rank growth to a height of 10 or 12 feet, picked upon the trunks of older trees, out of the thickly-leaved branches of which the scarlet-red flowers of *Epidendrum Schomburgkii* Lindl. lighted us up on our way. The last mentioned always put in an appearance only when the waters of the stream had lost all traces of salt. The immediate bank enclosed a broad strip of *Caladium arborescens* Vent. which here and there was interrupted by whole stretches of

Crinum the beautiful white and sweet-scented flowers of which, when the flood set in, were strewn over the surface of the water in the loveliest manner possible.

301. The more we widened our distance from the coast, the rarer became the specific coastal vegetation. The *Avicennia, Rhizophora,* and the *Conocarpus* had long disappeared when, just above five miles above the exit of the Mora into the Barima, we reached the mouth of the muddy and yellow Aruka: we followed this up to the entrance of its little tributary stream, the Cumaka, on the banks of which lay the Warrau Indian settlement of the same name, the temporary object of our journey. We found its mouth, as later on its whole course, to be so overgrown with the rankest vegetation, that only a person who had previously satisfied himself of the fact would ever have thought of looking for a village here. It was for this reason that Mr. King had all his work cut out to dispel my persistently recurring doubt in connection with the ever increasing obstacles to our onward progress. Innumerable trees, fallen across the stream, the clearing up of which often detained us for hours at a time, made a passage for our larger corial continually most tiresome, while smaller boats could wind their way through without difficulty. Hardly a faint ray of light pierced the dense firmly-interlaced boughs and branches, and no wonder then that a sombre darkness and the deepest silence should reign here even at brightest noon. The calm was only now and again disturbed by the flight of the *Alcedo superciliosa* Linn. and *A. bicolor* L. Gm. that were everywhere lurking for prey. As soon as a fish showed itself on the surface of the water, they rushed upon it with the rapidity of lightning, and seized it in their long beaks. It was only rarely that they missed their mark, which as often as not they had to abandon on account of its size being many a time beyond their strength. Upon the trees that had tilted over the stream grew the most lovely orchids, particularly *Maxillaria* and the small delicate *Rodriguezia* while, like fairy-like misty figures, *Aërnauta Nestor* flew slowly over the water in zig-zag flight, and *Aërnauta Leilus, Anchises* and *Aeneas* fluttered along the brush-wood of the banks.

302. My wish to be able to pace the first Indian settlement at last seemed on the way to fulfilment when, exhausted and tired, we reached an open spot where several canoes were to be seen: it was the landing place for the Cumaka residents whom I notified of our arrival by having several shots fired. After waiting a long while and no one being seen or heard we climbed the hillock, that rose directly from the bank to a height of about 50 feet, and on the summit of which the village, consisting of several houses, stretched in front of me, but I searched around in vain for a single living soul. All was silent, all deserted: it was only Nature, ever busy, who rested not nor idled. As already stated Cumaka is situated on the top of a small hilly range which at the same time is regarded as the first rising ground inwards from the coast whence it extends far away into the westward. The soil consists mainly of a hardened clay, mixed plentifully with portions of ochre, upon which rests a quantity of clayey brown iron-stone and large blocks of mica-schist. The abundance of "stone-marrow"* that is at the same time bound up with it indi-

---

* The range of hills on which Cumaka stood is composed of Epidiorite and Hornblende-schist. This weathers into a dark red Laterite with masses of concretionary ironstone and sometimes Bauxite This latter may be what Schomburgk calls "Steinmark" i.e., Stone-marrow." (E.E.W.)

cates its being of very recent origin: perhaps of the same age as Cascalho. Schistous syenite seemed to me to crop up in several places close by, although I cannot make this statement with certainty. From the flourishing condition of the provision fields in general, as well as from the whole surroundings of the village in particular, this soil must be unusually fertile.

303. The village consisted of twelve simple houses or rather sheds which, open on all sides, were thatched with the leaves of *Manicaria saccifera* Gaert. and rested upon six posts which again were joined together by cross-beams, onto which the occupants had slung their hammocks, etc. Various cooking and hunting implements stood and lay freely around in the houses which were naturally regarded by me with the most intense curiosity.

304. But however much I might be attracted by this simplicity of an Indian household, I was all the more powerfully repelled on the other hand by the ghastly filth and uncleanliness that reigned over the whole settlement, and completely confirmed the reproach generally made in the colony about the dirtiness of the Warrau, whose uncleanliness has become proverbial and where "As dirty as a Warrau" expresses its superlative degree of comparison. The more unpromising and dirtier however the inside of the houses, the sweeter and brighter did their immediate environs smile on me. A real forest of *Musa paradisiaca* and *M. sapientum* Linn., *Manihot utilissima* Pohl (*Janipha Manihot* H.B.), *Ananas edulis*, *Capsicum*, and *Carica Papaya* Linn. with their yellow melon-like fruits regularly enveloped the settlement, while beaten paths from the village led in all directions through these thick masses of green into the equally dense forest which chiefly consisted of *Laurineae*, *Leguminosae*, *Meliaceae*, *Rhizoboleae*, etc., these in their turn hemming in the flourishing provision fields.†

305. Among the twelve houses two were especially conspicuous by reason of their larger dimensions on which account one found favour in our eyes and was chosen for our quarters. As the need of drinkable water was fairly urgent, but not a single villager was to be seen, we had to despatch a messenger to the Atopani, a small stream not too far off on the bank of which was situate a second settlement where lived the chief of the lower Aruka Warraus: word was sent to inform him of our arrival and to ask for his company and assistance in regard to our wants. We occupied the interval in arranging our airy dwelling as comfortably as we could, our example being followed by the boat's crew in another house.

---

† The site of the old village of Cumaka while still going under that name is occupied by the fine mansion of the manager of the Aruka Rubber Estate, which at present includes the whole course of the Cumaka creek, up which a large motor-launch plies at all states of the tide. The virgin forest which sent old Richard into such raptures is all removed and supplanted with tame *Hevea*. The slope of the hill between the landing and the top is the site of the best-known "kitchen midden" in the district: the proposed public road connecting Morawhanna with Arakaka will pass right over it. The Attibani Creek, or as Schomburgk calls it the Atopani also has its entire course in the Aruka Rubber Estate and on its banks rice is cultivated by the estates' authorities. (V.R.)

306. I was still busily engaged with the unloading of our boat and transport of the baggage up to the village, when a given signal from Mr. King called me up from the bank to the settlement where, as soon as I reached the top, the cause of the call explained itself. Several Indians, led by chief William carrying in his hand the staff of office, the symbol of his authority, had just arrived and taken up their places in front of our quarters. This staff as I subsequently learned is to be found only among the coastal tribes standing in closer relations with Georgetown, the chieftain receiving it as a present from the Governor. After Mr. King, who at least was somewhat conversant with the Warrau language, had presented me, and the first salutation ceremonies consisting of a shake of the hand and the exclamation "Matte"* had been concluded, the savage wished to make me understand that I was welcome, and then immediately changed the subject to the one dearest his heart by asking my introducer whether we had "Sopi" (spirits) with us. As his readiness to help and assist particularly depended upon a satisfactory reply to this question we had to humour him: this was followed with the best results, for hardly had the Indians emptied their glasses than he sent one of them away for some drinking water.

307. Chief William was of small thick-set stature, clothed in an old torn striped shirt, while his subordinates wore but a coloured apron around their loins. We learnt from him that the residents of Cumaka had gone into the forest to build corials. When Mr. King told him that more strangers would be following in a few days he expressed himself as uncommonly glad, and assured us that they were all welcome.

308. Our things were now for the first time subjected to the closest scrutiny, and question followed after question, every single one closing with the refrain "Have you got much spirits with you?" to which the sight of the barrels with salted meat and the like may have prompted them. The fancy picture I had painted of an Indian settlement was certainly not realised here among these villagers, whose dirt and noticeable but futile craving for liquor entirely corresponded with those of the isolated individuals whom I had already had occasion to notice in Georgetown. The infinite delight and pleasure that Nature had granted me on the one hand in a much more superabundant measure than I had expected, I felt doubly or trebly minimised in connection with these people. After satisfying his curiosity, and on his departure asking for another glass of spirits, the chief left us with the promise to return on the following morning.

309. The unloading and fixing up of our things were soon completed, the latter not robbing us of much time, it being only necessary to follow the hint unconsciously given us by the Indians in the arrangements of their households, and now content and self-satisfied we gazed upon our work. It was yet with feelings of greater hankering and gratification that we gazed upon that of our busy and always smiling negro, Hamlet, wet with perspiration, who during our labours had lighted a thoroughly good fire on which he had placed the requisite number of

---

* *Anglicé*, Mate, Matey.

pots as became his business of duly-appointed cook. The fellow had just returned with a supply of roots and vegetables appropriated from the provision fields with a view to serving up the very daintiest of dishes with the ample means now at his disposal. Ever since leaving Demerara I had never seen his black face beaming so happily: he was very lucky, with nothing to worry over, but only to pick and choose: he was surrounded on all sides with abundance and his conscience was easy: any scruples about mine and thine did not seem to overburden him. What his joyful sparkling eyes and his widely smirking mouth gave promise of was soon performed, for out of the spoil of birds that had been shot and the yams and *Carica papaya*, etc., purloined, he prepared an excellent meal to which the whole company did full justice: we several times wished that the poor fellows who had been left behind on the sandbank could have partaken of it.

310. After Hamlet had bravely taken every care that not the slightest morsel should be left, we jumped into our hammocks to learn now what it was like to sleep in an Indian settlement.

311. The sun had just risen when I awoke but thought I was still dreaming. Was I lying in one of the dirty Warrau houses on the Aruka or had I been transported during my deep death-like sleep to one of the fairy gardens of the Thousand and One Nights? Thousands of voices in the most varied cadences fell upon my ear, died away in the far distance and neared again, became blurred in one another and then became distinguishable once more. Momentary silence followed a shrill outburst of the united singers, to be now interrupted by an initial chirp and buzz at first hardly perceptible that gradually became louder and louder until it burst forth in truly joyful wantonness. Just as my ears had listened in wonder at the notes, so did my gaze feast with real delight on the environs of the village lit up with the virgin sunbeams whence thousands upon thousands of dew-drops glistening at me like diamonds, finally found their ruin in the vital power and energy that was displayed by the *Heliconiae, Musaceae, Marantaceae* and *Uraniae* overladen with blossoms. The eye that was yet admiring the flower a moment before saw a topaz swaying over it during the next without being able to account for its presence, until as quick as thought it trembled and twinkled over the floral finery at another spot. On turning my more than satisfied looks elsewhere to another tree, the same illusory and rapturous performance was being repeated: here they fell upon a lovely ruby, there a glowing drop of gold or the thousand-fold reflecting sapphire, until finally all these twinkling, flying, fire-specks joined to form a most beautiful garland, but suddenly separating again, started their previous puzzling performance.

312. As for the humming-birds, though I had often in Demerara watched the lightning flight of these lovely creatures and amused myself for hours at a time with their restless activities, when like evening revellers (*Sphinx*) they momentarily swayed over the blossoms of the plants and trees to suck the honey and suddenly disappeared only to emerge elsewhere, or when, like glowing sparks, on starting to quarrel and fight they crossed the air from all sides and directions in thousands of turns—I had never hitherto seen so great an assemblage of them in so small an

area. In this swarm the *Trochilus mellivorus* Linn., *T. campylopterus* Linn., *T. moschatus* Linn., *T. furcatus* Linn., the tiny pretty *T. pygmaeus* Spix., *T. Mango* Linn., and *T. petasophorus* Pr. Max. were particularly noticeable. Diminutive and beautiful as these birds are, the different species are nevertheless equally as quarrelsome amongst themselves. On dissection I found plenty of small insects in their crops.

313. And still the enchanting early morning life had not yet reached its close. I soon recognised in the distance the squalling notes that were gradually approaching—thousands of shrieking parrots were flying over the environs of the village to some place or other that they knew of with plenty of food: the *Psittacus aestivus* Linn. opened the ball, while the pretty little *Psittacus nuchalis* and *P. melanocephalus* Linn. were already settled on the trees of the provision fields.

314. I did not stay any longer in my hammock: with a good jump I was out of my swing-bed, and quickly seizing a weapon the next few minutes found me already strolling around the outskirts of the settlement. The virgin forest joined close on to the provision grounds. The small beaten path that I followed soon led me to a second cleared space, the cassava field of the residents: this might have enclosed about three acres and consisted of a most flourishing growth of *Manihot utilissima* Pohl., which, although planted irregularly and without order, reached in general a height of 6 to 8 feet. Here and there the *Dioscorea bulbifera* Linn., *D. sativa* Linn., as well as *Convolvulus Batatas* Linn. and Pine-apple crept into, and hemmed in this forest of Manihot which amongst all Indians takes the place of our cereals. The root, a tuberous growth, contains when fresh a pungent juice containing Prussic acid which nevertheless, after grating and pounding, is separated under strong pressure. The Indians also cultivate the *Dioscorea* and *Convolvulus Batatas* on account of their abundant starchy contents.

315. Although the attention paid to such fields is not exactly of the best, their growth had collectively reached a perfection that surprised me. Sugar-cane and maize were in plenty, and the Pine-apple, taken on the whole, especially here vindicated its name of "Queen of Tropical Fruits." We were subsequently brought some that weighed from ten to twelve pounds and were as remarkable for their juiciness as for their fragrance.

316. The soil consisted of a fatty clay mixed with ochre, rotted timber and ashes, because on laying out a field the trees are every time felled and burnt. The largest giants that the fire cannot destroy remain lying where they are felled and become disintegrated in time. Rambling through such a field is therefore far from being a pleasant promenade, because one must be climbing continually over one tree trunk after another if one does not want to proceed in a perpetually serpentine course.

317. The roots of the Manihot reach complete maturity only after ten or twelve months, on which account one finds in every provision field a complete arrangement of series varying from the full-grown plants to the suckers, that have just been put in. As soon as the full-grown plants have been pulled out and the tubers removed, the stalks are cut into "sticks" two or three feet long, three or four of which are again planted in a hole. This done, any further care is left to Nature, except that they

are now and again cleared of the rank-growing weeds. If an entirely new field is to be opened, the planting is also done with "sticks": the soil is only loosened somewhat in the spots where they are stuck about one foot deep in the ground. The Indian however lays out such new plantations only a short time before the heavy rainy season.

318. All the pictures my imagination had painted in anticipation of the impression a virgin forest would make on me sank like faded shadows into insignificance before the sublime Reality that disclosed itself on entering it. In mute delight I stood in front of the mighty giants that had seen hundreds of years pass by, and yet with the same unimpaired vital powers were pressing their trunks to heaven and their far-reaching branches to every point of the compass. Huge *Lecythis* with ungainly "root-necks" (*wurzelhälsen*), *Laurineae*, *Leguminosae*, the giant *Hymenaea Courbaril* Linn., *Carapa guianensis* Aubl., *Couratari guianensis* Aubl., *Mimosa guianensis* Aubl., *Goupia glabra* Aubl., and *Bombax globosum* Aubl. were striving to fight for every free inch of space. They were all bound and tangled together with lengthy bush-ropes that crossed each other like ships' tackling, and the bush ferns were so matted and interlocked with countless *Bignoniaceae* and *Convolvulaceae*, that all these rank growths had to be destroyed before a way could be forced in between them. When I turned to look up at the trunks and branches there smiled at me through the semi-obscurity prevailing over the whole forest, fresh tumid mosses and lichens, pretty ferns, most beautiful Orchids and Aroids, the white or greenish aerial roots of which almost reached down to earth, and numbers of magnificent *Tillandsiae* with their lovely scarlet-red flowers.

319. The further I followed the Indian trail the thicker became the vegetation for which reason I did not venture to stray far without a guide. The noiseless repose was only here and there disturbed by the Indian ravens (*Psittacus Ararauna* and *Macao* Linn.) as they flew out of the thickly leaved branches of the *Leguminosae* in the long pods of which they had already found their breakfast and, now interrupted by me, were swarming with deafening noise around the nooks from which I could be seen. All of a sudden, a much shriller scream, coming from an immense *Carapa*, made me forget my resolution about not wandering off the path. Taking everything at the jump I hurried to the tree where I found a whole collection of *Falco nudicollis* Daud. The ear splitting din was usually started by one of the company, the others then joining in chorus: their note differs entirely from that of other species of falcon. Not far from this noisy throng was perched a much quieter party of beautiful *Falco furcatus* Linn., while others of the same species were swaying in broad circles round their restful mates.

320. With my curiosity satisfied, I hurried back to the path that soon led me from the hill down to a swampy valley through which the Cumaka was running its slow course. The vegetation had assumed another character. The foliage trees had disappeared, their places being taken by the loveliest palms, *Manicaria saccifera* Gaert., *Euterpe oleracea* Mart., *Maximiliana regia* Mart., and *Oenocarpus Bataua* Mart. the enormous trunks of which almost seemed to have exercised a damaging effect upon their more diminutive relatives loitering closer to the ground, because the undergrowth was entirely

wanting: only ferns, Aroids, *Scitamineae, Marantaceae, and Musaceae* covered the surface, climbing Aroids and the *Besleria coccinea* Aubl. embraced the bases of the palms, while the broad-leafed *Pothos* dotted the densely-wound columns with their white flowers. More towards the neighbourhood of the stream there grew a many-coloured mixture of different species of *Dracontium, Bacopa aquatica* Aubl., *Psychotria violacea* Aubl., and *Rapatea paludosa* Aubl. which were interspersed with delicate groups of *Spennera aquatica* Mart., *Lisyanthus coerulescens* Aubl., and the *Tocoyena longiflora* Aubl., with long red blossoms. A continuous rain trickled from the leaves covered with *Jungermanniae* and a heavy musty layer of air rested on the moist and slippery soil.

321. Feeling fatigued with all these potent impressions, I now hastened back to the settlement where a new surprise awaited me, for not only had all the villagers returned from their labours in the forest, but Indians from the nearest situate settlements had also gathered here during my absence. The scene in front of me was remarkably lively. Some standing in groups, others squatting on their heels, the men surrounded the house I occupied, where our baggage, cooking utensils, etc., seemed to furnish them with subject for conversation, while at some distance away stood the women and children with a number of tame monkeys, parrots, dogs, hammocks and fruits, their articles of trade. Although as already mentioned I had seen many a single Indian in Georgetown, I nevertheless experienced a peculiar sensation when, on first stepping out of the forest, I noticed such a number of reddish-brown naked figures: it was an impression in strong contrast to the one I had just received.

322. The Warrau Indians are almost generally of small stature: the men from four to five, the women seldom over four feet high: closer examination gives no practical proof whatever of any external powerful appearance because they are anything but muscular. The size of the head stands in very inharmonious relation with that of the body which remains still more strikingly pre-eminent as regards the long trunk and short legs: still, their beautiful sleek black hair, and their well-formed legs and thighs in every case distinguish them essentially from the African race. The face, owing to the strongly projecting cheek-bones is apparently broad, the forehead low. The pigment of the eyes appeared to me to be generally black. The eye-slits are raised somewhat at their outer angles towards the temples, without the forehead however being so compressed as the negro. In this connection they seem to me to form rather an intermediate link between the Europeans and the Africans. The bone at the root of the nose is somewhat depressed and the nasal cartilages flat. I found their teeth entirely bad on the whole and toothache seems to be common. The ears are small and neat, the neck is short and strong, the chest of the men is broad, while the breasts of the women, as soon as they have borne children, hang like sponges. Hands, feet, and ankles, especially in the females, are generally so delicately formed that they would serve as models to any artist. The black, sleek, shiny and thick hair, with both sexes hangs dishevelled over the shoulders. The chin of the men as well as other portions of the body which in Europeans are screened with hair, were with them covered by a fine soft down, which nevertheless both men and women sought to destroy by

out-rooting. The eyebrows are also subject to the same procedure, after which the skin, both here and at the corners of the mouth, is tattooed with several curved lines, which, particularly amongst the females, seemed to be generally customary, and gave them a characteristic though not uninteresting appearance.

323. The whole facial expression of the women and girls had something melancholy, but infinitely gentle about it. The young girls were commonly of buxom build, while the older women by contrast presented a more repulsive aspect. When the female reaches her twentieth year, the bloom of her life is spent: the former symmetry of her individual limbs and figure has disappeared, the elasticity of all her movements has given way to a certain indolence, and in place of a vitally fresh and robust fulness there appears on particular parts of the body an accumulation of fat which makes her really loathsome, because no clothing hides the misshapen masses from view. Their premature development and puberty may be one of the chief reasons for this rapid decline, since the girls are mostly already married by ten years of age.

324. Their pronunciation is very clear, except that the particular words and syllables have nothing pregnant and sharp about them, but being drawled, merge into one another.

325. The majority of the people collected here were suffering from inflammation of the eyes: indeed, many had almost completely lost their sight on this account: according to my belief their dirtiness and squalor together with the swampy and marshy soil are to be mostly blamed for the evil.* Besides affecting certain of the adults, a no less pitiful appearance presented itself amongst a number of children in particular, whose feet and buttocks were covered with awful boils as a result of which the extremities in some of the cases were deformed into real club-foot. Upon enquiring into the cause of the disfigurement I learnt that the sores were due to chigoes, a small species of flea, *Pulex penetrans*, which very generally at night digs itself under the nails and skin of the foot and there lays its eggs: if within a few days their removal is neglected, the worst kinds of ulcer immediately arise from the slipping out of the wormlike maggots which proceed to dig themselves farther in for a while. From the fact of these pests choosing not only the foot but also the breech for depositing their eggs, the greatest number of the Warrau youngsters bear mournful testimony of their parents' neglect and dilatoriness. I have never noticed such marks upon the children of other races.

326. On nearing the group I was not a little taken aback at the panic to which my appearance gave rise among the women, children, monkeys, dogs, and parrots: everybody at first sought to escape while the men, pressing impetuously around, offered me their "trade," amongst which were particularly noticeable the *Psittacus pulverulentus* Gm., wrongly named "Amazon Parrot" by the Colonists, the *P. aestivus* Linn.

---

* These inflammations of the eye, blepharitis, conjunctivitis, corneal ulceration, etc., due to infection with the pyogenic organisms are said to be still common among these tribes, as well as the boils described on the feet and buttocks, known as impetigo. The connection which the author traces between these conditions and the dirtiness and squalor of the surroundings is well-founded. It is a little difficult to say what Schomburgk means by "real club-foot." Infantile paralysis, the most common cause of "club-foot," is rare among the natives; he probably refers to deformities due to contraction of scar-tissue after extensive ulceration (F.G.R.)

which above all others is abundantly plentiful on the coast, and the lovely *P. accipitrinus* Linn. When angered, the last mentioned is undoubtedly one of the most beautiful of parrots for then the brilliantly coloured feathers at the back of its head bristle up to form a regular circle round it: the Colonists call it the Hia-Hia, which word exactly resembles its note. The largest portion of the crowd of people demanded spirits in exchange, only a few wanting knives, beads, cloth or money. Unable to satisfy the wishes of all of them, I only bartered for a few fruits leaving the remainder to the occupants of the settlement who, immediately after my refusal, started bartering with them.

327. Our own chief William who had reached here with his whole harem, pack and baggage, evidently wanted to keep us company during our stay, because he had already fixed himself up in one of the adjoining houses. After I had withstood the first assault, put down my gun and settled myself in my hammock, he forthwith appeared at the head of his four women and placing them in front of me, asked at the same time for a glass of spirits for each one. I had not the slightest intention of complying with the request until I yielded to the earnest representations of Mr. King, who was apparently well acquainted with the character of these people and earnestly warned me not to forfeit the man's good graces by a refusal.

328. Bad example corrupts good manners likewise here, while jeers and jibes can always upset the best of resolutions. William's three older women, after the style of their lord and master, emptied their glasses at one pull: only the youngest, who could hardly have been ten years of age, yet notwithstanding was daily expecting her confinement, resisted it in the sense that after but sipping the glass she put it aside under the liveliest signs of aversion, until the contemptuous scoffs and mocking laughter of the three other fellow-wives forced her to take it up again and make one draught of it.

329. In all the houses of the village the women were now kept very busily employed—the provisions that had been eaten during their stay in the forest had to be restored and the earthen vessels that had got broken replaced by others, while the activity and bustle attendant on the preparations for baking bread clearly indicated that the supply had fallen very low. Here squatted one party of women who scraped the knobby roots of the *Manihot*, while another rubbed those already cleaned upon a European grater that had been beaten out flat and nailed onto a small piece of board, while others again were returning from the provision fields laden with the tubers they had just pulled. Some were manufacturing dishes and pots off-hand out of the clay which the environs of the village supplied in large quantity. The hunting and fishing implements as well as a number of other household requisites, the hammocks and the crockery that the occupants had taken with them into the forest, were either already hung up again in their original places or else were still being used.

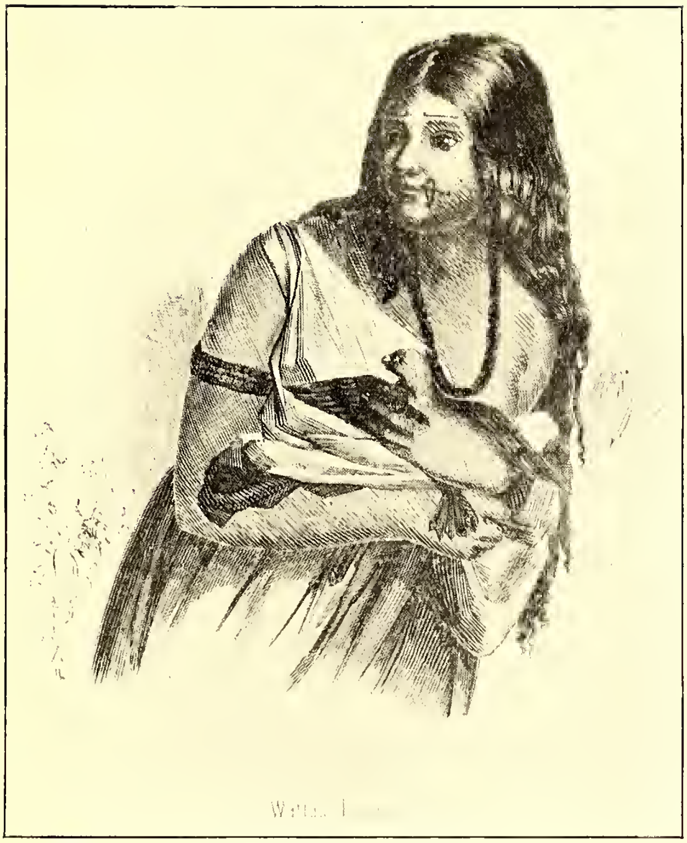
330. After the women, providing for Life's requirements, had grated a sufficient quantity of Manihot, it was forcibly stuffed into an eight to nine foot long cylindrical resilient tube (Arupa) plaited out of a species of *Calathea*. The apparatus, which during the filling becomes consid-

erably shortened and widened, was then slung by its upper loop onto one of the house-beams: on the other hand a long staff was passed through the lower loop up to more than half its length, its shorter end being caught under a strong peg that had been wedged into the ground previously. Two or three women thereupon placed themselves at the longer end and forced it down with all their might, so that the yielding and shortened cylinder, owing to the pressure, gradually became longer and longer. All the watery and poisonous contents of the tubers, which the forcible stuffing had not separated as yet, were now completely expressed, collected in a large pot, thickened by long boiling and evaporation and seasoned with a strong proportion of *Capsicum*. All the poisonous constituents are volatilised during the evaporation and the juice thus thickened used as sauce for meat. If an animal of any description should partake of only a small quantity of the fresh juice, violent convulsions are set up shortly afterwards, these increase in virulence more and more, at the same time that the whole body becomes considerably swollen, both symptoms finally ending in death. The "pepper-pot" of the Dutch colonists celebrated for the past hundred years depends for its chief ingredient upon this sauce, into which the meat left over is thrown after each meal: fresh Cassarip (the name of this thickened sauce) is now and again poured over it. The greater the age of such a pot, the greater the store set on it: the one belonging to a Dutch family must have been therefore a real gem, which the housewife had known how to keep unspoiled and of course also uncleaned for thirty years.

331. After the women had squeezed out the juice completely, the mealy mass was rubbed by others through a sort of sifter and strewn onto a large iron plate heated by a fire kindled underneath, and baked to a cake. The griddles for this purpose are manufactured in England and sold in the Colony to the coastal tribes.

332. Rolling and tumbling about in the dirt in front of the houses the children were cutting the most ridiculous capers and grimaces and would run shrieking and yelling into the arms of their busied mothers, as soon as I or any of my companions made a show of approaching them. To the devilish noise of the little goblins was added every time that of numerous yelping and starved dogs crouching alongside the women, when a kick or a blow on the part of their strict mistress with the first convenient piece of household furniture drove them howling and whining to a distance. The housemasters lay rocking and dangling in their hammocks and watched their plagued and weary women with the utmost indifference and complacence.

333. The rest of the time still left to us in Cumaka was just as lively and animated as at first. Every succeeding day brought fresh strangers attracted partly by curiosity and partly by the wish to trade. The news of our arrival must have been spread broadcast unusually fast because the village was soon transformed into a regular encampment. The houses were no longer able to hold the total numbers of strangers who now had to sling their hammocks in between the neighbouring trees and set up their travelling hearths close by. My brother's arrival with the remainder of the expedition increased the excitement still further and renewed all those deafening scenes again.



A WARRAU BUCKEEN.

334. The weather now assumed an essentially different character and all signs indicated clearly and distinctly the commencement of the heavy rainy season. The intensely blinding sheet-lightning, that for several nights past had changed the whole vault of Heaven into a fiery hemisphere, now gave way to horrible thunderstorms during which huge masses of water fell to the accompaniment of the most awful thunderclaps that were really enough to upset one's senses. This terribly grand phenomenon repeated itself almost daily; generally in the afternoon and night, more rarely in the hours before noon. Its immediate outbreak on every occasion is preceded by a loud hollow rumbling and rustling in the upper layers of air through which it seems as if the Wild Huntsman were coursing with all his untamed throng let loose: the lower layers rest in a peaceful calm, not the tremor of a leaf betraying the uproar already burst, that soon will be blustering over extensive areas with ungovernable fury. The riot and the revelry gradually drop lower and lower—the upper branches of the huge trees are already smiting one another in wild confusion, and their supple tops either give way to the impact or else the mighty giants are uprooted, and crashing heavily to earth in between their yielding brethren tear down all the smaller trees and bushes in their fall. The most terrible gale, of which the northerner has no conception, sweeps over the plains, mountains, and valleys like a fretting and fuming whirlwind while the partial darkness in which Nature becomes enveloped is momentarily broken and torn asunder by the quivering fiery lightning. An uproar like this often lasts for hours at a time, when the rain that falls generally amounts to between two and three inches.

335. Though the weather had become so unsuitable for further excursions, I nevertheless made up my mind to take a trip with an Indian guide into the interior of the virgin forest, an intention that would have been carried out already had not my brother's absence restrained me: his arrival had to be awaited, as, owing to the number of Indian strangers, I did not consider it safe to leave the camp at any time for long.

336. Supplied with a gun, plenty of ammunition, the provisions most necessary, and accompanied by an Indian, I set out on my trip. The heavy rains had stamped a new and livelier character on the whole of Nature and promoted the development of myriads of insects. The bush and undergrowth were in some places so completely covered with glistening beetles (*Buprestis*), *Cassidea*, *Curculio* and different species of Hemiptera, that one could hardly see the greenery of the leaves. Where they had left a bush or a plant free it was taken possession of by innumerable *Cicadae* of the most strange and peculiar shapes but which took to flight at a bound immediately any of us came near.

337. The richer the representation of lower forms of animal life the more impoverished became my herbarium because our surroundings soon consisted of nothing but dense virgin forest, out of which the undergrowth had been completely crowded, and where besides only a few of the giant forest trees happened to be in blossom. What the vegetation denied, the insects and feathered residents supplied to the full, particularly the *Herodii* and *Rhamphastidae* (herons and bigbills).

Among the former family I only mention the beautiful heron *Ardea Agami* Linn. that most frequently was to be seen solitary on the banks of the small forest streams, in the deepest shadows of the overhanging trees: this species is undoubtedly the most beautiful of the genus. The brilliant ash-grey feathers hanging down from the back of the head, over the neck and upper portion of the wings, as well as the peculiarly crooked plumage of like colour over the tail, give the bird, so staid and self-conscious in all its movements, quite a peculiar charm. A few specimens that I shot here seemed to correspond entirely with the *Agami* so far as plumage was concerned, but the beautiful feathers behind the head and over the tail were wanting: I took these for young males. The female has a very unassuming brownish plumage. I found these beautiful birds only on the Barima, Aruka, and Amacura. The *Ardea tigrina* Gm., and *A. brasiliensis* Linn. had also chosen these forest rivulets as favourite resorts though they were met with subsequently on almost all the rivers of Guiana. It was something funny to watch these lanky legged birds continually extending and retracting their long feathery necks as they waded along the water's edge, or to see them with drawn-in heads perched on the thickly leaved trees of the river side. Their flesh is very nice and has no trace of an oily or fishy flavour.

338. Among *Rhamphastidae,* I found *Rhamphastus erythrorhynchus* Linn., *R. vitellinus* Linn. and *Pteroglossus pipcrivorus* as well as *P. viridis* particularly plentiful here, where they had been attracted perhaps by the ripe fruits of various trees. No family has at any time been blamed really more wrongfully than this for eating the eggs and young of other birds, for it absolutely lives only on fruits, while the beaks of the three largest species *R. erythrorhynchus, R. vitellinus,* and *R. Toco* would prove still more unsuitable for eating flesh. In rainy weather, they usually perch on the trees and let their peculiar note, that imitates the jingle of the syllables pia-po-o-co—on which account the Venezuelans name the bird Piapoco—resound through the forest all day long: otherwise, it is only of a morning and evening that they especially make a point of doing this. They build their nests in hollow trees, and like parrots fly only in pairs: I have never seen them together in mobs. When scared from off the trees where they have found ripe fruits, the individual pairs part company every time. They were gladly welcomed at our table.

339. The glorious Trogon (*Trogon melanopterus* Sw.) of a lustrous metallic plumage, immediately after sunrise as a rule lets its wailing Wow-Wow note be heard through the silent forest from out of the *Ficus* trees on which it generally perches in company with the different species of *Ampelis* (Cotingas). The nest exactly resembles that of the wild pigeon. No bird gave me so much trouble when being skinned because even with the greatest care it hardly ever happened to come off undamaged: the skin is so delicate that even if the bird when shot falls from the tree and in falling touches a twig or crashes onto the hard ground, it becomes useless for stuffing. Among small feathered folk whole swarms of representatives of the *Tanagradae* and *Sylviadae* were particularly in evidence of a morning and afternoon: they flew through the forest from tree to tree, searching for larvae and insects on the bark

of the branches and flats of the leaves. Those that I noticed most frequently were *Tanagra cayana* Linn., *T. ochropygos, T. nigerrima* L. Gm., *T. Jacupa* Linn., *T. olivascens* Linn., *Sylvia cyanocephala* Lath., *Tachyphonus versicolor* d'Orb. I also often came across the pretty little Guiana songsters *Euphone violacea* and *E. rufiventris*: just as often the dainty *Nectarinia coerulea* Ill. and *N. cyanea* Ill. and associated with them, several small species of woodpeckers; *Dendrocolaptes guttatus* Licht. was never wanting in such a gathering. If a little brushwood made its appearance here and there, one could be assured of finding the Hokko hen (*Crax alector* Tem.), the Jaku (*Penelope cristata* Tem.) and the small species *P. marail* and *P. pipile* Lath., and *P. Parraca* Tem. as well as the *Crypturus Tao* and *C. variegatus*. The two last mentioned are most excellent poultry, far surpassing *Crax* and *Penelope* in taste. The large blue eggs of the *Penelope* are just as palatable: these are laid in a cavity in the ground where one generally finds from six to seven in the nest. The red eggs of *Crypturus variegatus* are not quite so big as those of a fowl, but as toothsome as that of the *C. Tao*. With plenty of spoil I returned with my companion to Cumaka next day.

340. For some time past I had experienced at night a continual itching and burning sensation, especially in the toes and under the soles of the feet, but had paid no attention to it hitherto, as I generally started on my outings directly at daybreak: it soon increased however to such an extent one evening that I got a coloured man to examine my foot next morning and was not a little surprised when he assured me that a whole mass of sandfleas (*Pulex penetrans*) were buried in the parts affected. I immediately had to submit to the painful operation of having 83 specimens extracted within the course of half an hour, and I still call to mind with a cold shudder those minutes when at last, on the soles being cleared, the nails had to be cut to pieces in the spots where the insects had settled.* The burrowing of the vermin is not taken notice of at all, because the slight itching, with which it commences its burrowing, cannot disturb one's deep sleep after a strenuous day. It is only after the first 48 hours that marked inflammation is set up, when one finds in the painful places a bluish spot about the size of a pea. This is the egg-capsule in which generally hundreds of eggs are found already laid. The worm-like maggots slip out unusually quickly and continue the boring operation commenced by the mother, unless prevented doing so by being extracted. So long as I yet remained free from the plague, I had often had to smile at the gruesome grimaces noticeable each morning when, on interrupting my outing, I went over to the Indians' houses where the whole adult family, squatting around on the ground, would be examining their feet from all points of view to see whether the sharply-pointed little pieces of wood or the knife was required. Even the poor dogs were plagued most unmercifully with chigoes, which also in their case bury themselves in the soles and make it practically impossible for the animals to run. If a pitiful mistress is not to hand, which is never the case with Warrau women, for they do not even possess sufficient motherly love to keep their little children

---

* The orthodox Indian practice is to take a pin or needle, pick away and turn aside the superficial and surrounding skin, and then squeeze out the capsule in its entirety. (Ed.)

free from the pest—and the men consider it beneath their dignity to relieve the tormented creatures of their trouble—the miserable yelping, whining and whimpering beasts can generally be seen tearing and biting away at their paws.

341. The favourite resort of these vermin is in the Indian houses, especially when built on sandy soil, and it is only by continually keeping this damp that the plague can be somewhat checked, for moisture appears to be absolutely repugnant to them. Even high boots, and doubled and trebled socks do not keep them off: they still find their way in to the toe-nails. Chigoes oftentimes get so much the upper hand in a settlement that the residents are forced to abandon it altogether.

342. The adage: "Experience bought is best" found in me an apt pupil, for from now onwards I never missed having my feet examined every morning, and on few occasions did it happen that 20 to 30 were not extracted, this finally reducing the balance of my nails on all ten toes to practically nothing. Mr. Hancock and good-tempered Stöckle were plagued to a similar degree as myself: the latter suffered considerable inflammation of the feet at first, this being probably produced by the continual picking and digging, which made walking quite impossible. Several negroes and myself soon became fellow-victims and I felt forced to regret my previous neglect all the more in that it exercised a considerable influence upon the remainder of my trip.

343. As it never rains but it pours, so also with our pests at Cumaka. If the chigoes chose the feet for their recreation ground, another insect took possession of our privates and certain portions of the abdomen, where it caused similar trouble. Almost every grass-blade harboured a species of *Acarus,* probably of the genus *Trombidium* and known by the general name of Bête Rouge which, sticking on to the person passing along, make their way to these situations where they just bury themselves and give rise to an intolerable itching and burning sensation. On examining such a place one notices under the skin an almost invisible little scarlet dot. The insect makes a way into the skin by means of its long proboscis and generally remains there two or three days: during this period it gives rise to an unbearable itch and shortly also to small painful lumps that often proceed to inflame owing to the considerably increased irritation of the epidermis and the irresistible inclination of scratching it. The trouble ends only with the death and dissolution of the little beast. The only remedy we found effective was lemon juice or spirits with which we rubbed the spots: this seemed to kill the insects at once, because the red dot changed every time into a black one. Only a person who has experienced the awful plague can have a full conception of the sufferings which of an evening convert the longed-for hammock into a real Laurentian grill, and of a day drive the sweat of anguish out of every pore. And finally, in order that our hands and face should not get off Scot free these were supplied with myriads of mosquitoes and a large ant *Pomera clavata* (*Formica clavata* Br.), the whole appearance of which made it look suspicious enough, its long black body being set with scattered hairs: fortunately it is always only found isolated on the trees or bushes. During the course of my short journey I had already come across many an ache and

pain, but words indeed fail wherein to describe the suffering that its bite once caused me when I inadvertently touched a specimen with my right thumb. The excruciating pain was immediately communicated from the bite to the whole body, and manifested itself most forcibly in the breast, and above and below both shoulders. Scarcely had a few minutes passed before I felt as if I were wholly paralysed, so that it was only with the greatest agony and effort that I managed to totter towards the settlement, but this I was not in a position to reach. The pain at the actual wound and the local swelling remained extremely slight. An Indian who was passing found me lying on the ground unconscious, and carried me to my hammock where a bad attack of traumatic fever kept me the whole of the following day. The Indians also have a deep horror of these creatures, but at the same time utilise them, so I have heard them say, as a remedy for rheumatism: if they cannot obtain relief from this complaint in any other way, they search for one of these ants, and fixing it between two bits of wood, let it bite the painful spot a few times, a treatment which, according to what we were assured, must be a radical cure for it.*

344. The hitherto prevailing changeful weather with thunderstorms and rain showers breaking only of an afternoon and at night, had gradually become more settled, because now they took place of a morning as well. At the same time Fever, the enemy we had been long afraid of, sneaked into our camp. Several of the boathands were attacked, among them our chief boat-captain (steersman), which unfortunately obliged us to remain in Cumaka far and away longer than was and could be expected.

345. The whole surroundings of the village had now assumed another aspect: thick mists densely obscured every tree up to noon, and the morning temperature, already lowered to 71° Fahr., rose again by afternoon to 80° at most.

346. Just in the same way as we all suffered from the low temperature and saturated atmosphere, so did my collections similarly succumb to the damaging influences of the weather: this was particularly the case with the dried plants and insects. If for only a single day I omitted to change the former and supply them with fresh papers dried in front of the fire, I could be almost certain that on the next I should find the treasures that had given me so much trouble and danger to collect all covered with a yellowish mould: preventive measures were useless for warding off its sudden onset although I smeared all the seams and chinks in the boxes with resin or other tarry substance. If every bright and sunny moment was not utilised in exposing my insects and birds' skins to the open air, the same mould (*Eurotium herbariorum* Link.) would destroy them also.

347. Owing to his skill and interest Dr. Echlin cured the fever of our worst patient, the chief boat-captain, sooner than we were justified in expecting. My brother and Mr. Glascott spent the interval mainly in determining the geographical position of Cumaka: it was essential for

---

* This remedy for Rheumatism is still in use among these tribes. Probably its action is that of a "counter-irritant," such an effect as a mustard-plaster might produce. (F.G.R.)

the former's further determinations that a definite point in the interior should now be fixed so that future observations could be connected up with it. The rest of the time available was taken advantage of by my brother in looking up the course of the Aruka, for which purpose one of the Cumaka residents who understood a little English rendered him yeoman service. Unfortunately he never succeeded in obtaining an accurate astronomical observation although he generally kept awake throughout the night so as to utilise every star as it should become visible through a rift in the darkened clouds.

348. The weather showing such a change, and our patients being so much improved that we could safely risk taxing their weakened powers again, my brother, in order to help them, hired another six Warraus under the lead of the chief's son. We all set out with them for the mouth of the Barima, to examine accurately this portion of the stream also.

349. As the whole personnel of the expedition suffered from general weakness, we took only the most necessary articles, everything else being well packed and left behind at Cumaka.

350. The Barima was soon reached again, and we now followed it towards its mouth. Immediately below the opening of the Aruka its banks take on an essentially different character, for they again become marshy and swampy and are so much exposed to tidal influences that we could not even find the smallest spot that afforded a firm footing: the farther we pushed along, the more did the vegetation along the banks approach that of the nearest stretch of coast-line, the *Rhizophora* and *Avicennia* already predominating.

351. To make this portion of the river basin suitable for cultivation, the huge sums that were required for bringing that of the Demerara under similar conditions would certainly have to be doubled. With every stroke of the paddle the previous flourishing growth of vegetation became poorer and scantier as the water got more and more salty till it finally resolved itself into nothing but *Rhizophora* and *Avicennia*, above which pretty clusters of *Euterpe oleracea*, *Leopoldinia*, *Manicaria* and *Maximiliana* towered in isolated spots.

352. The force with which the washing tide flowed up the Barima made us look for a sheltered place and wait there until the commencement of the ebb. This interruption of the journey that had hitherto kept us continually on the move was rendered extremely painful owing to our cramped and inconvenient position seated in the small corials, as well as to the huge swarms of mosquitoes that mercilessly thirsted for our blood. Sleep was not to be thought of for a moment owing to these tormentors, and amidst general rejoicing we welcomed the receding waters at about 8 o'clock when we resumed our voyage.

353. By oncoming dusk the sky was already lighted up by thousands of shining insects, amongst which the phosphorescence of *Pyrophorus pellucidus* Esch. was particularly noticeable: the deepest silence spread itself over our surroundings. Night soon enveloped everything in its dark veil, but here and there the chirping of the crickets and the croaking of the frogs showed that the world it hid was not at rest. These, together with the soft buzzing of mosquitoes and other invisible

insects, which would be now and again interrupted by the regular strokes of our paddlers or the jumping up and splashing of a fish, were still the only noises to be heard. But soon the unsuspected Life of Night awoke. It commenced with the hollow suddenly-stopping croak of huge frogs which the smaller kinds had already prefaced in a weaker degree, and the wailing notes of *Crypturus Tao*, *C. variegatus*, and *Eurypyga Helias* Ill.: the awful row of the howler monkeys and the shrill notes of wandering troops of small sackawinkis (*Callithrix sciurea*), enough to pierce one's very marrow-bones, were being continually added to these.

354. If Awakening Morn is a magic mirror displaying an aspect of Nature full of sublime surprises and reflecting the most temptingly beautiful and lovely images, one's inmost soul quails before the terribly uncanny Tropical Night, which continually keeps it up to that pitch of excitement of which we cannot quite free ourselves even in our lonesome forests at home notwithstanding they have something so very enchanting about them. As with a witch's wand, the confused tumult is suddenly stilled, no echo betrays the life just passed, and only the continuous and regular stroke of the paddlers shows that man alone is not resting along with the other creatures. A noisy hubbub at the corial's bow means that our splashing has scared away a flock of water-birds to seek refuge in the tall root-branches of the *Avicennia*: their loud cry of fright starts afresh the whole Babel of booming and wailing, of piping and piercing voices, that has only just been stilled. And then the moon, casting her magic light through the momentarily-rent dense veil of cloud, illumines the smooth sombre surface of the water where the shadows of the river-margins meet, until a moment later, the whole surroundings are once more plunged in darkness. Just like the first morning, the first night in a virgin forest will never be effaced from my memory.

355. Unlike the case at Nightfall, Day-break was not disturbed by any of those wild thunderstorms. The excited elements seemed as if they were reposing preparatory to blustering with renewed strength and energy, through the whole of nature, shortly afterwards perhaps in one furious uproar. The morning dawned and shed a peculiar tinge over the repeatedly broken clouds. The uncanny noises had long been silenced, and only the distantly-heard gurgle of *Penelope cristata*, the sound of which had so often reminded me of the game we used to play as children by blowing through a goose's wind-pipe, as well as the articulate and gloomy lament of *Pionites momota* Ill. which exactly resembles the words Hutu-hutu, notified us of the close approach of day. It is now that the uppermost fronds of the *Leopoldinia* become tinged and change with incomparable rapidity from darkish grey to fiery yellow, the early dawn is broken, the sun has risen and awakened again the active life already described. Hundreds of Parrots, screeching most terribly the while, are making their way in pairs over the river, and the eye revels in the thousand-fold changes of colour which are ever being brought into view, as they hurry on in their continued flight: innumerable Humming-birds like scintillating meteors of many a colour, again flit as quick as lightning from flower to flower and drink the nectar of

the fragrant blossoms or sport with the dew-drops that, mirroring a world in themselves, are trembling on the leaves: the Toucans from up among the highest tree-tops attract one's attention with their 'pia-po-o-ko'; the Orioles, peeping inquisitively from out of their purse-shaped nests on the branches of the scattered foliage-trees, try their very best to imitate the different notes audible from far and near, so that, carried away in the general excitement, they may play their part in the life just called into being: the red Ibis, with their brilliant plumage glittering in the golden sunbeams, fly in one long advancing series towards the coast, while the white Egrets tarry upon the banks, rise ahead of us, and settle down once more, and so repeat their flight every few minutes according as they are scared away again.

356. By break of day I had noticed with surprise that the water had assumed a very strange appearance, in that we passed a number of floating islands of varying sizes which lent the river as vigorous a charm as it did vitality. The first of these floating islands that hurried past our corial down the stream was eagerly scanned by me, and on it I found a torn-off mass of matted grass. During the dry season of the year the rank masses of grass, of blue *Heteranthera reniformis* Ruiz. and numerous other water-plants form a covering over the whole surface of the upper Barima basin: during the rainy season these pieces get loosened off by the increased force of the current, but only a few of them reach the sea, all kept ever on the move by the opposed effects of ebb and flow.

357. On approaching the mouth, these islands presented a prettier and livelier appearance. Countless water-fowl, temporarily settling on them, were busily searching for food, a large quantity of which they must find in the blue and white flowers of the floating matted grass, while enormous chains of the large *Anas moschata* Linn. kept them company with a vigorous cackle. Guns, bows and arrows were hastily brought into requisition so that noon, now close at hand, might not find us without the wherewithal for a tasty meal.

358. Towards twelve o'clock we safely reached Barima mouth and with it the proud waters of the Orinoco as they slowly rolled along, but found ourselves in the same predicament we had experienced the day previous and the night before. We searched in vain for a small dry spot, but owing to the whole surroundings being subject to tidal influence nothing was to be found, until at last some of the Indians managed to locate a place on the right bank near Barima Point: it was thickly covered with spiny *Mimosae* and *Papilionaceae* which, owing to the innumerable rank creepers, had become changed into an impenetrable and shapeless bush. All hatchets were soon put into requisition and within a few hours sufficient space was cleared on which to pitch our tents, whereupon we started to unload, a task that the high state of the tide considerably lightened.

359. It was by about evening, after we had just finished unpacking and put everything to rights, that we noticed a humming and buzzing which ever became louder and louder. On closer examination we found it to be due to myriads of mosquitoes which, swarming around the roots of the *Rhizophora,* made a rush for us immediately after sundown and,

thirsting for blood, forced their way with whole battalions into our tents, even necessitating us to leave our longed-for supper in the lurch. I had endured courageously many a patient ordeal both in the Colony and on the journey out already, but not even our Indians could make a stand against such an attack as this. Everybody made for their hammocks where, wrapped up in them, they escaped the painful stinging to a certain extent at least, while we Europeans just as speedily fixed up our mosquito nets.

360. But I hardly knew whether it was more trying outside or inside the net because the stifled breathing entailed thereby almost became intolerable considering the oppressively damp atmosphere. With this suffocating sensation was now associated the uncanny feeling evoked by these harpies as they approached and soon withdrew to swarm again all of a sudden right on the net like a lot of bees: their painful bites nevertheless only too forcibly reminded me that more than one of them, which continued to attack me without a minute's truce, must have discovered an entrance, but no exit. Only after midnight did the blood-curdling music come to an end, and daybreak afforded us some idea of the amount of blood we had lost on seeing the fully distended importunate invaders settled inside the net. It is with inward glee that one looks forward to early morn after so troublesome a night.

361. This awful plague repeated itself daily at sundown, and often became twice as bad with approaching storm or rain when the swarms reinforced themselves into downright thick clouds. After midnight they hastened back to search the bank-mud among the intricate roots of the *Rhizophora*, the most suitable breeding-place for their development.

362. Though plenty of life was stirring along the coast and on the Waini sandbank, the crowds of feathered residents seen here of a morning, anxious for a feed, were far greater, judging from their size and plumage, than I had ever observed over there. As the lonely bush towards noon was alive with swarms searching for a shade, I took friend Stöckle with gun and ammunition in the hope of enriching my collections.

363. Amongst the numerous feathered folk I also found for the first time the dainty *Anas autumnalis* Linn. in strings of from 16 to 20 birds: the coloured people and Indians have given it the name from its peculiar piping whistle which is exactly like the syllables Vis-is-si. I never saw this species subsequently in the interior.

364. Had we not had Indians with us on the trip many of the birds we shot would of course have got away, because unless we had both wanted to risk the danger to which I had already been exposed on the Waini sandbank (Sect. 293), we did not dare follow them out on to the deep muddy mass. To remedy the inconvenience, and at the same time to watch this oftentimes ridiculous performance of mud-swimming, if such a term can be applied to the manoeuvre, I always arranged for one or two negroes or Indians to accompany us. Hardly had a duck or any other bird, so long as it was tasty, dropped after being shot, especially while the ebb was on, than my dusky companions immediately threw themselves upon their stomachs and, with the serpentine windings

already described, squirmed their way out over the mud, to usually some 100 to 200 feet wherever the bird happened to be stuck fast. Often enough, the mud closed well in over the entire body, leaving only exposed the black head pressing forwards to its goal, or else the bird, with its last vanishing effort, took to further flight: nothing however could tire the eager pursuer, who shortly pushed ahead until he caught the fugitive in his teeth, and so returned with it to the bank. A sliding match like this has something so awfully funny about it for a spectator that I have often rolled on the ground doubled up with laughter.

365. The *Cancroma cochlearia* (canoe-bill) and lovely sunbird (*Eurypyga Helias* Ill.) were just as numerous as the different ducks, while the brilliant flamingo, dragging its way in a long series high above us, excited my covetousness afresh but without any success: on the other hand our fishing was richly rewarded every evening, for we never withdrew our lines without a catch. A sheat-fish, *Bagrus mesops* Vahl., of moderate size showed itself particularly greedy. I noticed that whenever the Indians pulled in their line with this fish they always struck it a heavy blow on the ventral and dorsal fins. As I subsequently learnt on closer inspection, they did this to destroy at once the peculiar fin-rays that are supplied with small barbs acting as effective weapons of defence, for if the fisherman imprudently holds the fish in his hands before these are destroyed, he is sure to get damaged by them: the wounds produced are not only extremely painful of themselves but generally set up considerable swelling and inflammation as Stöckle unfortunately had to learn by experience.

366. With the onset of evening all of us generally used to hurry down to the beach with our lines and the pleasure of angling which he had hitherto disdained, was soon aroused in Stöckle's breast. He declared that as a youngster he had indeed regretted the time spent on fishing by the other boys in his native town, on which account he had probably employed his own in better amusements, but here there was no other entertainment for him and so in old age he was willing to do that which he had despised in youth. Within a short while, he succeeded in pulling out a moderately sized *Bagrus* which suddenly however freed itself from the hook and was quickly making for the water. Stimulated by the general laughter, the novice, now becoming vexed, threw himself upon the creature, but seizing it firmly with both hands, immediately jumped up again as if he had gone crazy: abandoning the chase he ran about like mad, screaming and wailing, with both arms swaying up and down. On finally bringing him to a standstill we noticed two wounds on the ball of the right hand, which soon began to swell and inflame so badly that the inconvenience had hardly disappeared six days after. Since then Stöckle had a keen aversion for angling in consequence of which I could never prevail upon him to catch hold of a fish before I had done so myself. A few days later these creatures came close in shore in such quantities, that there was no necessity for throwing out lines: our Indians just waded a few steps into the water and with long sticks struck into the dense shoals until they killed as many as were required for supper.

367. The abundance of fish at the estuary of the Barima is very well known to the Indians and Venezuelans living at the mouth of the Orinoco, who accordingly visit it frequently. Amongst the numerous fish met with here, the Morocotu or Osibu, a species of *Myletes,* is the most tasty and hence very much sought after: indeed, hardly had our Warraus recognised it than they disregarded everything else and gave it their whole attention. The fruit of a large tree which they called Caracamata served them as bait, for which reason they always carried it about with them. Towards evening several of our companions specially laid themselves out to catch some, and with this end in view chose a spot offering them as much security as possible against the current. While the ones stood ready waiting with bow and arrow, another threw these fruit into the water, and at the very moment a morocot let itself be seen coming to the surface to swallow it, for which purpose it has to turn somewhat on its side, it became the prize of those on the watch who never missed. The fish were almost always from 25 to 28 inches long and generally about 12 inches high. I have never found them elsewhere than on the coast at the mouths of the rivers, so that it would seem that they avoid fresh water. A similarly tasty fish, also only frequenting the mouths of the coastal rivers, is the Querimanni, a species of *Mugil,* which however never took the hook, and had therefore to be caught in nets.

368. On account of this wealth of fish, particularly of the Querimanni, in October, November, and December, whole crowds of people betake themselves here to salt the catch or dry it in the sun and then bring it down the coast to the Georgetown market, where a Querimanni fetches three shillings on the average. We came across but one single Venezuelan with three corials who wanted to benefit by the rainy season that had set in.

369. Except for several orchids such as *Epidendrum* and *Maxillaria* that covered the trunks of the *Rhizophora,* and a number of the pretty yellow *Oncidium iridifolium* and *Zygopetalum rostratum* that had chosen the shady bushes of the *Avicennia,* my botanical interest found but little to stimulate it.

370. The unfavourable weather also prevented my brother making any astronomical observations, so that his plan of surveying the Barima up to the Boca de Navios was upset. As all other attempts likewise failed, he had to limit his survey of the Barima to the immediate river-bed, for which he chose the rate of sound transmission to measure distances between different points. On the 12th May he accordingly had both our mortars set up at distantly separated spots with instructions to fire them at fixed specified intervals, for which purpose each detachment carried a chronometer while he himself stood on the opposite shore and watched the times taken between the rising of the smoke of a mortar and the receipt by him of its sound.

371. When towards evening Mr. Glascott returned to the tent with his division, he brought two giant electric eels (*Gymnotus electricus*) 7 feet

long and 1½ feet girth, as well as a large poisonous snake (*Trigonocephalus atrox* Schleg.) 4 feet long, called Labaria by the Colonists. They had found both electric eels in an almost dried up swamp and I am firmly convinced that a "shock" from them would have killed the strongest ox. Mr. Glascott could not describe laughably enough the procedures carried out by the negroes in putting the dangerous brutes to death. The Indians had found the Labaria rolled up under a tree, and had killed it. The *Gymnotus* was served by our negroes for their supper and eaten dripping over with fat: as our table was supplied with something better, I felt no inclination to share theirs.

372. On account of his hand Stöckle was unfortunately still unable to help me with the skinning, and as a large number of birds had to be prepared as quickly as possible or run the risk of turning bad, I was on the 18th May prevented accompanying either my brother or Mr. Glascott, though I did not like missing the opportunity at all, ever since the capture of the *Gymnotus*. Mr. King accordingly went with the latter as a welcome companion: along with three Indians they both left in the cheeriest mood for the point determined upon, while my brother hastened to the shore opposite. After the lapse of an hour I heard the first shot fired, but, what remained unaccountable to me, was its being immediately followed by a second though much weaker one. Stöckle's genial accounts of the homeland and his younger days had almost made me forget the whole thing when, in about another short hour's time, he called out to me: "There's Mr. Glascott's boat coming already back but without him, Mr. King, and the third Indian." Of course I immediately jumped up and hurried to the boat, where, even before it landed, I heard my name being called amidst an awful wailing, and soon recognised a black and bloody body lying in the bottom as Mr. King. His whole face was blackened and trickled with blood which had formed a thick coagulum on the top of his head and on different parts of his body: his hands and arms appeared to me to be in the same condition, and as for his pride, the beautiful moustache and whiskers, together with the largest part of his crop of hair, had disappeared. At first sight I was momentarily robbed of speech: shuddering in my very soul I stood before my disfigured and suffering friend. Full of life, joking, and chaffing, he had left me hardly two hours before, and now Everyone's Favourite lay before me in the most deplorable condition, his groaning and moaning only interrupted every now and again with the agonising cries of: "Oh God, my eyes," "I am blind and always unlucky," "Both my eyes are shot out." Close to him lay a figure no less pitiable, the third Indian who stretched both his burnt arms out towards me.

373. Neither of the two Indians accompanying them spoke a word of English, King was no longer master of his senses, while the unrestrained and perplexing pantomime of both paddlers could have driven even the most cold-blooded individual to despair. Help as far as it lay in my power to give, was the one thing I felt demanded of me. With the assistance of Stöckle and the two Indians Mr. King was accordingly carried as quickly as possible to the house where, while the

others went to fetch their wounded mate, I cut the clothes off his poor body, only to find unfortunately the chest in the same condition as his face: the continual trickle of the blood alone betrayed the situation of the eyes which had become quite swollen and unrecognisable. My next care was to clean up as carefully as I could the whole mixture of coagulated blood and dirt, during which operation the groaning of my poor friend naturally enough often made my hands shake. The two Indians were in the meantime hurriedly packed off to the opposite shore to fetch my brother, Dr. Echlin, and the remainder of the party who, arriving shortly after, helped me in my efforts. After removing all the oozing blood, and carefully rubbing the lacerated parts with olive oil which we fortunately carried, we tried in every way to lessen the inflammation of the wounds. The whimpering and wailing indicated only too clearly that our friend's sufferings were awful.

374. After fixing up both patients as comfortably as possible, and doing everything we could for the present, some of the Indians returned for Mr. Glascott, who in the meantime had remained behind with the instruments, and it was only on his return that we learned the cause of the accident. Mr. King, who had arranged to fire the charge, had forgotten to wash out the mortar after the first shot: when he now went to pour in the fresh load of powder, about a beer-glassful, this exploded and as the mouth of the short barrel was directed pretty well vertically and he was just then bending over it, it blew him at least ten paces distant so that he lay as if dead for several minutes at Mr. Glascott's feet. The poor Indian, who during the loading had closed the touch-hole with his hand, must not have noticed accurately that the powder-chamber still contained some fire: he also was blown away by the explosion and burnt in the manner above described.

375. The general hilarity hitherto prevailing especially at our midday and evening meals, when King knew how to smoothe the gloomy wrinkles from out of any ruffled brow with his ever genial and exuberant humour,—humour that did not forsake him even at night amidst the painful torments of mosquitoes,—had now disappeared, not only for the reason that our grief made every outbreak of cheeriness impossible but because, on account of the accident, the gaiety and mirth had run dry at its source.

376. When on the following morning our hunters returned from their trip they brought a beautiful deer and an enormous alligator. The deer was the first mammal with which our table had been supplied since our departure from Georgetown, and accordingly proved most welcome. The alligator measured 7 feet, and without delay I seized knife and tools to skin and prepare it. Unfortunately like many another treasure, this skin became the prey of moisture and irremovable mould. The musky smell peculiar to the animal developed to such a degree during its preparation, that becoming quite overpowered by it, I had to leave the work from time to time and get a whiff of fresh air. In spite of every washing it was a week before my hands lost the disgusting stench that gave rise to many a shudder and nauseous sensation, and it is for this reason I have ever since then had a strong antipathy to musk,

377. As in the case with the Waini sandbank the empty water barrels, in spite of all the measures taken to supply the daily loss as far as possible with rain-water, forced us to think about returning to Cumaka. On the 19th May the survey of the mouth of the Barima was completed. It offers the same obstacle to navigation at its mouth as does the Waini. If this were overcome, one finds, equally free, as far as the branching off of the Aruka, the safest waterway for vessels of from 250-300 tons burden. Our camp was found to be situate 8°36″ Lat.N. and 60°18″ Long.W.

378. Having already on the above date again packed our baggage in the corials, we struck camp on the 20th and fixed up our poor friend in the biggest boat as comfortably as circumstances permitted. He was still totally blind while the burns had largely suppurated whereby his sufferings seemed to have been considerably relieved. With commencing flood, we left the mouth of the Barima and that of the mighty Orinoco: of the latter I had unfortunately seen nothing except its tranquil streaming waters, and in clear weather on the horizon, a few green islands or a distant sail which, like a seagull, bore away into the dim distance.

379. The incoming flood carried us quickly and uninterruptedly past the islands and their active life floating up the stream, back along the old course until the turn of the tide forced us to stop and wait for the favourable flood which brought us back next day to Cumaka quite safe though in an absolutely different state of mind than when we left it. Shortly before our arrival prior to heading out of the Barima into the Cumaka, one of our Indians noticed a sloth (*Bradypus tridactylus*) upon the prominent roots of a Rhizophora, that probably after either quenching its thirst or swimming across the river was now resting from its strenuous labours. With a melancholy and piteous look, as if it wished to say "Have pity on me," it let us surround and seize it. It was certainly easier to do this than to release it from the root-branches to which it clung with all its might. It was only after tying both its fore-feet, its sole but extremely dangerous weapons of defence, the wounds from which are said to assume the worst of characters, that the united efforts of three Indians using all their strength succeeded in loosening it. In all natural history books old and recent, it is said that the sloth is the laziest and most indolent of creatures, and that the most urgent pangs of hunger will hardly force it to leave a tree until long after the smallest little leaf has been consumed, slanders that have been spread about no animal more wrongfully than this one. To be sure the whole build of its body is such that the creature every time plays a miserable rôle on level ground. If the latter is in any way smooth, its efforts to progress remain futile, and pity must be awakened even in the most unfeeling person when he sees the poor creature lying flat on the ground with both fore-paws searching all directions in vain for a hold. When it does finally clutch upon a point of support with the long sharp incurved claws of the one fore-foot it quickly stretches the other one after it and then with difficulty drags its whole body along, for the limbs are not able to carry it. If on the other hand one finds the animal on a tree, he hardly recognises it again, on seeing it swing with ease

from branch to branch. The water is assigned as its home for a fish, the clear sky for an eagle, the surface of the earth for other animals, the forest tree alone for a sloth. Without trouble and effort it stirs from the lowest branches to the topmost, and from tree to tree, especially if a strong wind sets in motion and brings their branches closer together, so that they can be gripped more easily. It is a peculiar sight to watch this animal on the move when, in accordance with its whole build, it always utilises not the upper but the lower surfaces of the branches. With the back dependent it first of all extends one fore-paw as far as possible, digs in its claws, stretches the other to the same spot, and simultaneously drags along both hind feet, a method of progression, if I may so term such a continuous movement, that is fairly fast. During rest by night, and by day, it continually hangs in this position below the branch with all four paws clasping an insignificant space. If it climbs from one bough to another in a vertical direction, it is done in the same way. With the one fore-paw it claws at the higher branch until clutched, when by contraction of the whole body, the second and both hind-paws immediately follow it. Though I subsequently came across these animals so frequently in the interior, I never found a tree that had been robbed of its foliage, although I have seen ten to twelve of them on one and the same.

380. As we kept our prisoner alive for a long while, I had every opportunity of watching its movements. If I put it down on the smooth and hard-trodden ground under the tent-cover or in the house it hardly moved a couple of feet often after hours of the most violent exertion and laboured respiration which sounded very like the deep sighing of a man. But no sooner was it handed a stick and brought close to a house-beam than it hung onto it in that position for hours making a continual contented purring sound and then swayed backwards and forwards. Its favourite resort is the lonely gloomy and damp virgin forests where, born on the trees, it spends and ends its days.

381. On landing at Cumaka, we were gladly welcomed by the villagers and the chief prided himself not a little on the fact that we found all our baggage as we had left it, intact—but of course he immediately asked for a glass of spirits as a reward for his honesty and fidelity.

382. Already by next day no end of strangers had collected: they regularly swamped the river at the landing-place with their corials. The skill of the Warraus in the manufacture of these corials, as the large canoes are called, excels that of all other Indian tribes, and is celebrated along the whole coast-line. In their whole construction, neatness, safety and rapidity, these boats, without their makers having any ideas of the theory of boat-building, formerly surpassed by far those brought over from Europe. Now, it is true, this source of industry has been very much encroached upon. The well known Spanish "launches" that were employed in the revolutionary wars on the side of the Columbians and generally carried 70 to 80 people together with two three-pounders were also made by the Warraus.

383. The forests supply them with excellent trees, particularly the giant cedar (*Icica altissima* Aubl.) which is so named wrongly by the

Colonists on account of its smell, style and colour of timber greatly resembling the well-known Bermuda cedar. Besides the *Icica* they also particularly utilise the colossal trunks of *Bombax Ceiba* and *B. globosum.* If on felling the tree, the trunk has the length of corial required, they hollow it out and throw it into the water for several days: if too big to transport without special contrivance to a rather distant sheet of water, the already completed concavity is kept continually full of water. When they think that it is now sufficiently soaked, the manufacture is completed by bringing it to the right lines with the help of several fires lighted under the staging on which it is placed, the expanded sides being held apart by means of strong sticks whereby the corial, on account of the action of the heat, obtains its trough-like shape at each extremity: this is the one single risky part of the operation when owing to the slightest neglect or inexact equality of the fires, the wood immediately splits.

384. As I had to have a corial I seized the opportunity offered and bought for myself from chief William one of the smaller kind at a cost of ten Spanish dollars (at four shillings the dollar). It was 33 feet long and during the whole of my three years' travels under countless difficulties, completely justified the trust I had set on it at the time of purchase.

385. My brother and the Englishmen accompanying him could not let the 24th May, Queen's Birthday, pass without a celebration. The rising sun was greeted with a salute of 21 guns and a thrice repeated hurrah. This form of salutation, unknown to the Indians, aroused a general disturbance in the settlement at first and drew to our quarters all the neighbouring villagers who could not understand the reason for such a cannonade. As however, on their arrival, they recognised adequately enough from our faces that the cause of the shooting was anything but a hostile demonstration, they immediately joined in the general rejoicings. To their intense enjoyment, from the large flag-staff set up in front of my brother's house there flew on the light morning breeze the huge ensigns of Great Britain, Holland, Columbia, and Brazil which my brother had with him on account of the interests of these Powers sharing in the fixation of the Boundary. The crews received double rations, each Indian a glass of rum, while we drank the Queen's health in the champagne with which the Governor had presented my brother on his departure from Georgetown. Everything was given up to enjoyment and Cumaka could have scarcely ever spent a day like it: the influx of the Indians who had all become inquisitive about the firing lasted throughout the day.

386. Unfortunately poor old King could not take part in these festivities, although his improvement was considerably advanced. Our fears about his having completely lost his sight were soon dispelled when the swelling subsided: this was effected by the application of a very simple measure, namely, continuous poultices of cassava bread soaked in hot water, whereby further inflammation was prevented. He soon began to recover vision, and this revived his good spirits that until then had lain dormant.

387. The everlastingly violent tropical rainshowers, and resulting atmospheric moisture unfortunately gave rise to fresh sickness amongst

our company. While it was simple fever that afflicted us before, dysentery was now so intimately associated with it that, what with Mr. Glascott having been also attacked, my brother found himself forced to leave with Dr. Echlin alone for the Amacura which was assumed to be part of the boundary line between Venezuela and British Guiana. For several days prior to his departure my feet, that had been cut when the chigoes were extracted, commenced to be so painful that not a moment's rest either by day or night was to be thought of, the inflammation finally increasing to such an extent as to make my following him impossible. With the healthier of the boathands and some of the Indians he left us sufferers and Cumacka on the 27th May, comforting one another and trying to while away the weary monotonous interval.

388. Though up to now I had bravely withstood all the attacks of fever and dysentery to which the others had succumbed, the inflammation during the early days of its onset did not permit of my once putting my feet to the ground. Considering that this condition of affairs was now aggravated by the angered onslaughts of mosquitoes which I could avoid just as little as Mr. King, our despair and anxiety, as the evenings set in, can well be appreciated.

389. The soaked cassava-bread poultices had worked such wonders with Mr. King, that I applied them on myself, and within a few days felt so relieved, in fact, the inflammation was already so much reduced that I could again trust myself to stand for a short while: I was more than delighted at this because the many and varied blossoms which the hunters brought home from their daily excursions indicated only too clearly that the rainy season had called quite a new flora into existence.

390. My feet nevertheless did not allow of my going more than a few hundred yards, but to lie in my hammock with such botanical seducements was impossible: I had to get outside, and in order to do so, measures were soon concocted. With my limbs carefully wrapped in cassava poultices, I let myself be taken to the Cumaka and journeying by corial up to the Aruka, collected all I could, at least from along its banks.

391. My hopes were fulfilled to a high degree. The continued moisture had supplied the whole river-side with entirely new ornaments and where formerly the eye only noted the most varied shades of verdant foliage, it now revelled in the richest floral decoration of orchids and masses of creepers which spread in multi-coloured confusion over the trunks and branches up to their very tips. In this lovely tapestry embroidered with flowers were particularly noticeable the glorious *Cacoucia coccinea* Aubl., *Norantea guianensis* Aubl., *Bignonia heterophylla* Willd., *B. alba* and *B. incarnata*, *Petrea volubilis* Linn., *Passiflora coccinea*, *Allamanda Aubletii* Pohl., *Securidaca volubilis* Linn., and *Clitoria Poiteaui* DeC. with their red, yellow, blue, and white blossoms which formed a really fairy-like contrast of colour with the dark rich foliage of the trees to which they had trusted themselves. The large white waxy flowers of the *Gustavia angustifolia* Linn. and *Clusia insignis* Mart. only increased this magic colouring still more. Oh! it is times such as these that amply compensate us for our many grievous hours, shattered hopes, and bitter experiences! Once fixed in our heart and soul, they become our life-long companions and ever presenting novel

charms help to cheer us when the Present and the Future cast aside their deceptive veil and Life in its darker aspects looms threateningly ahead of us.

392. But yet it was not the eye alone that enjoyed it. The moist atmosphere filled with the loveliest perfume from thousands of flowering orchids transported me to that stage of Imagination which discloses the innermost recesses of one's heart, and makes the full enjoyment of the Present dispel all thoughts of the Past and Future. So bountifully did Nature shed her wealth on me. I had never yet seen such an abundance of orchids in bloom. *Oncidium Lanceanum* Lindl., *O. Baueri* Lindl., *O. lunatum* Lindl., and the small *O. iridifolium* Humb. Kth. *Zygopetalum rostratum* Hook, *Epidendrum umbellatum* Lindl., *Myanthus barbatus* Lindl., *M. deltoides* Lindl., *Bifrenaria longicornis* Lindl., *Maxillaria cristata* Lindl., *Coryanthes macrantha, C. maculata* Hook., *Monachanthus discolor* Lindl., *Brassavola angustata* Lindl., *Peristeria pendula* Hook., *Brassia macrostachya* and *B. Lanceana* Lindl., were associated on one single tree, for the height of the trees made the reception of such masses of bloom possible: the *Ionopsis teres* had taken up its station on the *Caladium arborescens* Vent. Near by, the edges of the water glided in between a regular trellis of giant *Crinum*, the height of which gradually rose with the incoming flood when the floating flowers alone indicated the existence of their stalks. It is hardly necessary to mention that from now onwards I daily renewed my excursions by corial, and thus continually added to my Herbarium, for on every repeated trip my anxious eyes discovered something new or something previously overlooked. There was only one thing to mar my pleasure, at least momentarily, and that was the innumerable ants which particularly chose the *Epidendrum* and *Coryanthes* roots for their home: the slightest shake of the branches brought thousands into our corial so that, to free ourselves from the painful bites of the frightened insects, we often had to leave behind the loveliest specimens of flower.

393. Almost every tree from the mangrove up to the huge Leguminosae lodges its own more or less dangerous species of ant, one of which is also distinguishable from the other by the construction of its nest. That on the mangrove is at the same time the surest measure for the height of the flood, because it is only found at a level seldom reached by this condition of the tide. Even as different as the nest is also the odour peculiar to each species which varies from that of our large forest ants to the most awful of stenches. As soon as the flood reaches an unusual height and comes within reach of the nests, the worried occupants escape in a body to the tree top where they lump themselves together in huge clusters whence they will drop on the slightest disturbance. Woe to us when one of these clumps fell into the corial. Bishop Hatto could not have run from the pursuing mice as nimbly as we did from the countless hordes that suddenly attacked us in battle-array.

394. It was on one of these short excursions that I happened to discover a new *Coryanthes* over which I deemed myself to be rightly proud. I could hardly trust my eyes on seeing in front of me the glorious gigantic yellow brown-spotted blossom of six inches diameter and upon closer examination recognising it as a member of that genus. The only speci-

men remaining, it was unfortunately included in the valuable collection of orchids that got destroyed in Berlin. On another occasion we noticed a giant ant-eater (*Myrmecophaga jubata* Linn.) as it was swimming across the Aruka, but as none of our weapons were loaded at the time it escaped pursuit. It swims unusually fast, though only the tip of its long snout, a portion of its back, and end of its long tail is visible above the surface: the whole of the rest of its body remains submerged.

395. On getting back to the settlement on the 7th June I found at the landing place a corial that differed in several respects from those previously seen, whence I surmised the arrival of Indian strangers: my conjectures were confirmed. They were Arawaks occupying the basin of the Asacota and had come on a mission with the information that their chief Caberalli was about to pay Cumaka a visit and would be arriving next day. Mr. King, who was already acquainted with Caberalli, excited our curiosity not a little on telling us that he was one of the proudest of rulers and that on paying his round of such visits he usually contrived to appear with as much pomp as possible, and that we should probably find him surrounded with at least the half of his dependents.

396. The sudden outburst of shouting and screeching at noon next day announced his arrival in the neighbourhood of the village. Attracted by curiosity, I also halted at the waterside to see the proud and dreaded sovereign come along and gazed in surprise at the Cumaka, upon the smooth glassy surface of which quite a small flotilla was paddling in our direction to the accompaniment of a wild monotonous chant. The nearer it approached the landing the wilder became the shouting that was taken up by the thousand-voiced echo of the forest. At the head of the procession, and manned with a large number of paddlers was to be seen an extraordinarily big corial with its centre occupied by an elegant tent-cover made from the fronds of *Manicaria saccifera*, under which sat a figure in white trousers and similarly coloured jacket, with a head wrapped in a long red cloth the ends of which fluttered from the temples,—this must be the chief—and it was he!

397. Upon this corial reaching the landing-stage a general shout from all the boats heralded the important event. The powerful though small-statured man, strongly tattooed at the corners of the mouth and over the eyes, now rose and sprang on to the bank. With stately tread, accompanied by some others of his people and without deigning to cast a single glance at us as he passed, he swept up the hill and to the settlement. At its entrance stood our William with the most important personages of his little State in a costume that would have made even the most serious minded individual laugh: the staff of office found support in his right hand, a shirt covered with dirt enveloped his body, while a pressed-in worn-out hat crowned his worthy head, but in spite of these attentions, he also was not vouchsafed a single look. Without altering his pace in the slightest degree, Caberalli flaunted past him, and casting a critical eye over the different houses finally came to a halt in front of one that seemed to have taken his fancy. A few words in the Warrau language which he addressed to the wondering occupants appeared to be strict orders, because the owners proceeded to clear out of it without delay. Hardly was this done when one of the taciturn attendants com-

ing along with a bundle, opened out a splendid hammock which was slung in the middle of the building, whereupon the proud commander good-naturedly laid himself down and now examined us from his throne with contemptuous haughty gaze. The dependents who had stopped at the landing showed up shortly after in one long series bringing with them their master's travelling tackle, which mainly consisted of a number of large and small delicately-plaited baskets, several guns, and a complete kitchen and cooking-apparatus. If only a contemptuous look had fallen to our lot before, there now was combined with it a still more triumphant pride when Caberalli turned his gaze upon the Warraus gathered around who, with open mouth, were staring at all this wealth of riches. Although the autocrat had been given the courtesy of being met at the landing—even admitting that curiosity had led us to take such action—and yet wanted us to place so high a value on his worth, we made up our minds that if he wanted to be "stuck-up," we could be much more so. As His Royal Highness had passed us at the landing without taking the slightest notice of us, Mr. King and I immediately decided to regard the presence of the proud gentleman as if it were non-existent, a decision that was impressed upon all our people.

398. He appeared keenly sensitive to this absolute neglect on our part: he tossed himself about restlessly and vexatiously: he wanted as if to get out of the hammock but lay down again: he then cast reproving and enquiring looks in our direction—but it all made no difference, and without worrying over him, we went about our business. Perhaps an hour might have passed in this way since he arrived when he finally seemed to have overcome all uncertainty and irresolution concerning his conduct: he now suddenly jumped out of his hammock, put his costume to rights and with a look of disappointed expectation strolled over to our place followed by several of his companions. When he reached our quarters we dropped everything that we were just then doing, and awaited him with indifference. As he knew Mr. King, he went up to him first, greeted him, and told him that he had come to pay him a visit and give him some important information. Now came the series of his salutations for myself and the others: in my case they were given in broken English.

399. So far as size is concerned, the figures of the Arawaks differed but little from that of the Warraus, as they do not exceed the average man's height: but as regards shape as a whole, they varied more. The whole bodily frame was much better proportioned: they were indeed not so muscular as the former, but on the other hand, shewed themselves much smarter in all their movements, far more active and far more agreeable. The colour of their skin was much lighter, the features on account of their regularity were more expressive and owing to the more marked tattoo had assumed a peculiar character.

400. After Caberalli had withdrawn to his house and changed his costume, on which account his attendants had to open every basket to get out the articles of attire specially affected, he had some other hammocks slung close to the first one and laid himself down alternately, now in this one, now in the other.

401. His Highness's immediate requirements being now satisfied he settled himself as comfortably as possible. Just as their chief had pre-

viously done, so did his companions scrutinise the remaining houses, their collective owners being soon driven out of their possessions and forced to build themselves shelters outside the village so as to find cover from the continuous rain. Having slung their hammocks and made themselves quite at home, several of the usurpers appeared before Caberalli supplied with guns, bows, arrows, and fish-hooks, took their orders from him, and then went off in two corials. The whole procedure left no room for doubt but that they were the fishers and hunters attached to the royal household who had to provide for the mid-day and evening meal, which soon turned out to be the case.

402. We now considered it expedient to pay the chief our return visit: he received us seated and accepted our greetings far more condescendingly and amicably than we could have expected in view of his previous conduct. But when Mr. King asked him about the mystery he had to communicate, he explained that he would have to wait until my brother's return. The dividing barriers of the imaginary etiquette were henceforth broken and we now conversed with one another in friendly fashion.

403. Every day brought fresh company so that the number of guests gradually grew to such a size that there was soon no more room for erecting shelters in the free space surrounding the settlement, with the result that they now had to be constructed in the forest: the visitors already arrived seemed to want to stay just as long as we did.

404. The next troop of Warraus that followed the Arawaks was led by an Indian who, to my surprise, carried on his arm a violin set, it is true, with only two strings. After the newcomers had built their benab, the musician sat in the middle of it and commenced playing his beloved instrument, on which however he never produced a modulation of note by pressure of the left-hand fingers, but just drew the bow over the free strings in longer or shorter sweeps. He had probably bought the instrument in town. Alongside the old violinist the whole assemblage manifested the utmost gaiety, which particularly of an evening after sundown increased to wild delight when old and young commenced dancing to this beautiful music: it was all the more interesting to me because I had never yet been able to watch the Indians taking their pleasure. The perseverance of the aged musician exceeded all my conceptions of patience—for hours at a time without a moment's pause he sounded his two notes without moving a muscle of his face, or any other portion of his body but his arms. When he finally came to a standstill, he crossed over to us and asked for a glass of spirits as a stimulant: if he did not receive it straight away no power could make him start playing again, whereupon the whole crowd of dancers naturally came up every time in a body to prevail upon us with their combined entreaties, to satisfy the obstinate old artist's demands.

405. Properly speaking, every Warrau settlement possesses its own music instructor, Hoho-hit, who teaches the young boys and men of the place to blow on a sort of Oboe which is made out of a longer or shorter piece of bambu, at the upper end of which is fixed a thin mouth-piece of reed with a longer or shorter glottis. The notes produced on this wind-instrument much resemble those of the Russian national instrument. Almost every evening the young people gather around their music-teacher and under his leadership hold a concert in the middle of the village. Ac-

cording to the size of the bambu-stem and its opening, the instrument gives a higher or a lower note. A movement with the hand, a nod of the head, or beating the time with the instrument on the part of the Hoho-hit towards that one of the musicians who has to commence or fall in, regulates the whole performance. Although as I have just remarked, each instrument only possesses a single note, the musical conductor nevertheless knows the notes of the collective instruments so exactly, and gives his directions so explicitly, that really a basis of harmony rules in the noise, just as those Russian players produce the most difficult pieces of music with their pipes. Now, are the Warrau Indians or the Russians the discoverers of the instrument? A question for investigators into the history of music.

406. Although the music-loving residents almost every evening made one's ears tingle with their reeds, they never as yet had danced to it: the notes of the violin however they could no more resist than could the children of Hamlin resist the rat-catching piper.

407. For the most part the various dances are performed only by the men: the most interesting however were without doubt those in which the women and girls took part, when they adorned themselves in the most festive style. Neck, arms, wrists and ankles were then encircled and decorated with stringed beads. After the women dancers had all collected, the men with the violinist at their head stepped from out of the bush with the instruments in their hands and, bowing low all the time, moved off towards where the ladies were waiting: the men were decorated with the loveliest feather ornaments, and each had tied around his feet several strings of seed-capsules of the *Thevetia nereifolia* Juss., which by knocking up against each other during the strong stamping of the dance produced a deafening rattle. They slowly approached the spot chosen for the performance: the violin ceased to play, and the movement was regulated by the note of a small fife, upon which the piper cleverly knew how to imitate the voice of a monkey. As soon as the place was reached they surrounded the musician in a circle: a second signal gave the order to put all instruments on the ground and bow their heads until such time as the Hoho-hit had murmured several unintelligible words after which, on a third signal, they raised them again and picked up their instruments to play. All the evil spirits were now banished from out of reach of the dancing ground, and at the same time the power taken from them of disturbing the frolickers at their sport or hurting them in any other way. On completion of this exorcism ceremony the real dance itself commenced. The women and girls now likewise formed themselves into a ring, circled around a few times, and then each drew near to the one whom she fancied dancing with, when she put her right hand over her sweetheart's left shoulder, he placing his left hand over her right shoulder. Thus locked together, with eyes turned to the ground, they tripped it forwards, backwards, and sideways towards the old fiddler. The performance coming to an end, the dancers stamped three times with their feet, whereupon a deafening row was produced. If her partner were a near acquaintance, her brother, or the object of her heart's silent yearning she quietly waited for the third stamp at the very spot they then happened to occupy: if however he was no

trusted acquaintance, a stranger, or some indifferent person to whom the pleasure of dancing had alone impelled her, she fled with the speed of a gazelle back to her original place immediately the first stamp sounded. A general shout on the part of the men brought the ball to a close.

408. Besides this dance, the men, but these alone, performed several others which according to our ideas did not bear the most elegant of names, since they were named after animals whose antics or voices they sought to imitate. Thus they spoke of a monkey-, a sloth-, a bird-dance etc. Though at the beginning these innocent amusements aroused the keenest interest both in myself, Mr. Glascott, and the others who saw them for the first time, this soon began to wane, because the dissolute rowdy dancers often continued them late into the night and banished sleep from camp. However here, as elsewhere, we had to make the best of a bad job: the best a wise man can do when he can't do otherwise.

409. I had never as yet seen such an assemblage of people where hardly one was to be found without a scar due to some previous injury, whether owing to explosion—some rotten fire-arm purchased with colonial covetousness, imported into Georgetown as trade, and received in payment for hired service—or to fractured bone, axe-cut, snake bite, encounter with wild animals or to strife arising between man and man, and yet all were fairly well healed, and mostly without surgical assistance. I was especially struck with the case of a young man who as the result of the bite of a poisonous snake, *Trigonocephalus atrox,* had immediately cut off half the foot which had been bitten: the damage was so well repaired that he only limped, almost unnoticeably.

410. On June 10th my brother and his party arrived all right at Cumaka, and were heartily welcomed by everybody. After following the Aruka for thirteen miles he had reached the mouth of the Aruau. To become acquainted however with the upper course of the Aruka and at the same time to visit a Warrau settlement which was to be found higher he followed it up. Beyond the Aruau mouth the width of the Aruka had rapidly taken off, so that the former proud and mighty river now hardly measured 90 feet across: its banks were generally marshy and taken over solely by *Euterpe* and *Manicaria* while at the same time its waters appeared so dark-black and muddy that one could hardly distinguish where the reflected picture of the trees and bushes fringing its sides commenced and the edges of the land ended. Late in the evening they reached the Warrau village that was occupied by 18 Indians, from whom he hired a few for transporting the corial over the unnavigable places between the Aruka and Amacura that had to be surmounted on the following day. A second, just as small a settlement, was situate still farther up and, according to the statements of the Indians, must be the last on the upper Aruka. From there, the residents maintained, the source of the river was to be found some 15 miles farther to the southward.

411. Next morning they returned down the Aruka as far as the mouth of the Aruau and following the bed of the latter reached the portage by evening when they dragged the corial over to a small tributary of the Amacura. The ground rose to a height of about 40 or 50 feet above the level of the stream where this range of hills, stretching from North-West to South-East, at the same time formed the watershed between the small tributaries of the Amacura and Barima. The direction of the overland

journey itself lay towards the South-West: its length amounted to a mile. The size of the corial, owing to the small trail, rendered the work so difficult, that they took two days to bring it to the Yarikita River. The soil here consisted generally of a rich loam, on which grew a number of the most beautiful timbers for ship building. It was my brother's firm conviction that when the time should subsequently arrive for the distribution in this district of a denser population and a higher state of civilisation, nothing could possibly be easier than to junction up the Barima with the Amacura by means of a canal since it would only be necessary to scoop out the short stretch of river-bed which is at present unnavigable.

412. Except for some isolated granite boulders, which without any doubt had been rolled here by the force of the current, a stone was nowhere to be seen. The course of the Yarikita had been a north-westerly one, and after the small streams Wayuma and Waina had junctioned with its left bank, had rapidly increased in size. The action of the ebb and flow was also distinctly visible. It was only when quite close to its mouth in the Amacura that they first noticed on its right bank several mountains rising to a height of 500 feet named Wanatari by the Indians. After entering the Amacura and following its course, they reached by six o'clock in the evening the mouth of the Otucamabo, on its right or eastern bank. As my brother was keen on visiting Asecura, a settlement occupied by Arawaks and Warraus under the chieftainship of Yan, he turned into the Otucamabo and was cordially received by the villagers.

413. In company with chief Yan and some of his dependents, they left Asecura on the 2nd June and steered up the Amacura. After passing Yarikita mouth it rapidly lost its previous size, and in the course of the day dwindled down to a stream of ordinary proportions. During the evening they entered the Curiyapo, which runs into the Amacura from the West, to search its banks for a Warrau settlement which they likewise found. As the rain fell in torrents they were obliged to remain here next day but as the following one did not prove any more favourable, they continued their trip up the Amacura to its cataract and rapids. This in the main proved to be an insuperable obstacle to navigation for the present, owing to a granite wall that stretched right across the river. The Curiyapo, close to its mouth, is only separated by a small neck of land from the Amacura which with its flat banks twisted its way through the valley like a snake. Nevertheless the farther they proceeded up it beyond the Curiyapo, the more the banks increased in height and the denser became the forestation. The Tusa, which is about as deep as the Amacura, joined it on its right a few miles above the Curiyapo.

414. The sketch of the bed of the Amacura, as hitherto shewn on the maps, turned out to be completely incorrect, because it lies much farther to the westward than indicated. The perpendicular height of the Cuyurara cataracts was about 12 feet, in connection with which two other cataracts appeared somewhat farther above, so that the water rushed down a vertical height of 30 feet. The large corial prevented the travellers proceeding up beyond owing to the insignificance into which the river dwindled there, while on account of the unsuitable weather, astronomical observations were of course not to be thought of; ever since Cumaka

hardly a star had come into view. From what the Indians said, the source of the Amacura was to be found a two days' journey above the Cuyurara.

415. On the 5th June they returned to Asecura. When my brother left Cumaka he had only taken with him a chronometer, a sextant, an artificial horizon, and a prismatic compass, and as, until the 6th June no opportunity had offered itself for an observation, he was none too sure about the accuracy of his chronometer. Already on the 25th May some of the Indians from Asecura had visited and assured us that they had been attracted to Cumaka by the cannonade on the morning of the 24th which they had distinctly heard in their village. When taking his departure my brother had accordingly charged Mr. Glascott to have our mortar fired three times on June 6th at six o'clock in the evening, and distinctly hearing the sound in Asecura, was at the same time afforded the opportunity of fixing the difference of longitude between Cumaka and that settlement.

416. They left Asecura on 7th June to resume their investigations up to the mouth of the Amacura, whither Yan also accompanied them. By midday they had reached the Coyoni which, just as the Mora constitutes a connecting channel between the Waini and Barima, provides a similar one between the Amacura and Araturi since it junctions the former with the Waiicacari or Bassama that falls into the Araturi which opens into the Orinoco opposite Imataka Island.

417. On his return my brother found Mr. King, the skin of whose face during his short absence had peeled off three times, quite convalescent. On the other hand he found Hancock and Stöckle in all the more pitiable a condition, the inflammation during the past few days having again taken on so bad a turn that they could no longer use their feet:—mine seemed to be rapidly running the same risk.

418. In spite of the large number of individuals, who were scouring the neighbourhood the whole day long, the keen hunters nevertheless brought home every evening plenty of spoil. Our people were also fairly lucky and were most agreeably welcomed whenever the Aguti (*Dasyprocta Aguti* Ill.) and Laba (*Coelogenys Paca* Cuv.) were found among the bag. Owing to the excellence of the latter's flesh, there is a saying throughout the Colony that "He who has eaten Laba and drunk water from Guiana's forest streams, can never leave Demerara again." The favourite resorts of this creature are small forest-creeks where it burrows under the roots or chooses a hollow tree-trunk to live in. To get the animal out of its hiding-place, the Indians train small dogs which, like our badger-hound, make their way into the holes and drive the occupants out.

419. On the morning after my brother's arrival Caberalli in all the glory of his sovereignty appeared before him and gave the information hinted at, which consisted in this, that some days prior to our arrival in Cumaka a murder had taken place in a settlement close by. He pointed out the murderer as a boy from Cumaka named Maicerwari: the victim was a Piai (medicine-man) known as Waihahi. Mr. King as Police Inspector was not a little surprised, particularly because chief William had not said a word to him about it, although, as Caberalli maintained, he had witnessed the tragedy. Without further delay King accordingly had

William as well as Maicerwari sent for. Stepping into the house at the same time as the boy, William seemed to have a fore-boding of something evil, for his pleasant countenance altered so strikingly at sight of the latter's presence that it already evidently admitted half an avowal. We watched the boy in wrapt attention and our interest increased the more as he regarded us of his own free accord and unsubdued by fear, but in no sense with the consciousness of having committed crime. The lad was about twelve years old, and well-grown, and displayed a really proud and self conscious yet at the same time extraordinarily earnest and melancholy expression, which was unusually deepened by his long black and shiny hair. We had been repeatedly struck with his serious and sedate disposition, because we had never seen him playing with others of equally tender years, and never dreamed that already at this youthful age he had stood forth as the avenger of his family.

420. The examination had now to be undertaken, but unfortunately only Caberalli and my brother's interpreter could speak a little English: the knowledge of the Warrau language on the part of Mr. King was just as poor and could in no sense serve adequately for a procedure of this nature. The summons for the chief and for Maicerwari had immediately aroused suspicion amongst the villagers and strangers, with the result that our house was soon surrounded in silent and attentive gaze by everybody present. Mr. King turned first of all to William, and asked him why he had kept the occurrence secret. "Because I saw nothing wrong in it: the boy avenged his father's and mother's death on the man who robbed him of them." After a long and difficult enquiry, the following finally came out:—An Indian, by name of Waihahi who lived on the Orinoco, had for a long time past visited the Indians on the Aruka, by whom he was generally feared as a mighty Piai. The early death of the boy's father who had insulted the Piai at a drinking party, and against whom the medicine-man had thereupon sworn an inexorable grudge, let it be only too readily surmised that the latter had already put his threats into execution, and as at a subsequent visit of the Piai, Maicerwari's mother, who was tenderly loved by her son, also met her death with similar symptoms, the suspicion against Waihahi turned into certainty, and the boy coolly went up to the murderer and charged him with the shameful crime. "My revenge is not yet satisfied: there still lives a member of the hated family," was all the satisfaction he received. What the boy had borne in his bosom ever since his father died and which the death of his beloved mother fanned still further into flame had soon to be put in execution, lest the murderer should get hold of him first. Some days before our arrival Waihahi came to Cumaka and invited the villagers to a drinking party which he proposed giving in one of the neighbouring settlements. When William with several others went to attend it Maicerwari who had not been invited, proceeded to join them. Already in the course of the forenoon, as a result of their heads getting excited with the drink, a stiff wordy warfare arose between William and Waihahi, when the latter angrily exclaimed that however William might curse and brag he nevertheless knew that he, as well as his arrogant companions, would die in the forest on their return journey just as suddenly as Macerwari's parents. The boy who had not touched a drop, but as a quiet and at-

tentive observer had kept himself aloof from the quarrel, believed the time ripe enough for both satisfying his revenge, and saving himself and his chief. Overcome by his immoderate passion for drink, Waihahi threw himself into his hammock, and soon fell into a sleep from which he was never to wake again. Like a lynx, Maicerwari had followed his every movement, like a shadow he had sneaked after him over the ground, and now with eyes flashing revenge, he stands beside the hated murderer, his war-club is slowly raised—and with a crash it falls on the head of his mortal enemy. The victim's brother, who was also present, buried the body in the same house: the residents fired the village and withdrew to another district.

421. The deepest silence prevailed over the whole settlement during the long examination. With the ending of the enquiry, the people around whispered lightly to one another, while the crowds of women and girls stood somewhat farther aside, each one watching our faces as well as every twitch of the muscles on the part of William and Maicerwari. Though an unmistakable confusion clouded the countenance of William, for he knew only too well that he had done wrong in not reporting the occurrence to Mr. King, the boy stood up before us all the more unabashed and calm. What he had done was done with the highest sense of duty: he would have been despised had he delayed doing so. Blood for Blood, Life for Life, was the idea that the boy had first learned to express, the sentiment that he had imbibed with his mother's milk.

422. We looked forward to Mr. King's verdict with extreme tension but were more than surprised when he not only wrote out his notes of the case, but also gave orders for the exhumation of the body, so as to confirm personally the truth of what had been stated: at the same time he held Maicerwari prisoner so as to take him to Georgetown and send him up for trial, which in spite of all protestations on our part, and to my brother's great annoyance, was subsequently effected. Strictly speaking, he had no legal right to take such action, because Cumaka was situate on a stretch of land to which the Venezuelans believed they had just as much title as England, and had accordingly been declared neutral, and because the lad, to whom the religious and moral laws of the white people were absolutely unknown, had only followed his own convictions.

423. Unfortunately the poor untrammelled boy, accustomed to freedom, had to spend a year in prison before being acquitted. I must candidly admit that this overdone zeal of Mr. King cooled my attachment for an otherwise honest man, and up to this very day I cannot forget the twelve-month which he certainly made the unhappiest in the lad's life.

424. Next morning the exhumation of the corpse had to be proceeded with, when we as well as William, the boy, and all the Indians who had been present at the murder, had to attend as witnesses. But where were we going to get the people to undertake the job? Just the very mention of it alone had struck such wholesale terror into the Indians that no power on earth could prevail on them to take even a spade in their hands. Mr. King would have forced William and the other Indians in vain to attend otherwise than as idle spectators, had he not called upon our whole crew in the name of the law to assist him in carrying out his legal duty, a demand which had to be obeyed. The

ship's long unsheathed swords seemed to instil so much respect, at least in the Indians, that they passively submitted to the order. Curiously enough Maicerwari here again made an exception, for hardly was he informed that he must accompany Mr. King to the victim's grave than, with eyes wildly flashing, he declared himself quite ready to do so.

425. Several upstanding half-charred blackened posts and houses partially destroyed by fire, as well as bushes burnt and singed indicated, at the end of half-an-hour's tramp, that we had reached the former village, the scene of the tragedy. With the most striking expression of extreme terror, William now pointed to a spot surrounded by six charred posts, telling Mr. King at the same time that this was the house he was looking for. No mound indicated the grave, the loose red earth alone betraying it, but none of the Indians could be prevailed upon to take a spade and start digging. Even our negroes declined with every sign of inward horror: "The dead man will follow me my whole life long, drive sleep away from my bed, hunt me out of the circle of the happy ones, and poison every drink for me"—such was the continual rejoinder to Mr. King's threats, entreaties and orders. Finally, the promise of a double ration of rum induced one of the coloured people to agree to do the work. He soon struck up against the body which, covered with palm-leaves, was rolled up in a hammock, and spread a most awful stench. As soon as this stink reached the Indians standing at a distance, they ran off in the wildest terror, screaming with fright. The boy alone remained, as if rooted to the spot, while his truly awful wildly-flashing eyes and the powerful twitching of his muscles as he held his breath, only too clearly betrayed that all the fury of his revenge was once more kindled. Every stroke of the spade, as the man went on digging, only increased his unbridled passion, and, with half-bent body, he stared into the grave so as not to miss the instant when the hated body would again come into view: a tiger could not have watched with more inward greed for the propitious moment to be assured of its prey. After the body had been quite uncovered and the hammock unfolded, there awaited us a more terrible sight before which everybody present, except Maicerwari alone, unconsciously recoiled. The blow had crushed the whole of the right side of the head, and the split bone had been forced inside so that the brain lay exposed. The boy remained standing there motionless, while his soul seemed desirous of grasping every detail of the ghastly picture, and figuring it out in all its closest particulars. After Mr. King had several times addressed him in vain, he at last caught hold of him and asked, "Have you done this?" With sparkling eyes the boy suddenly pulled his youthful figure to its full height, let his rough contemptuously exultant gaze rest for but an instant on each of us, closed his fist convulsively and then raised his arm slowly on high with a powerful muscular effort to let it fall again as quick as thought: all of a sudden the compressed chest heaved heavily while drops of sweat rolled from every pore: he glanced again in triumph at the corpse, and with a piercing shriek turned away and hurried back to Cumaka.

426. We stood for a long while face to face without saying a word, no one venturing to break the silence. This method of satisfying the revenge of a wild unbridled disposition had affected us very strongly. I

had intended keeping the skull for the Anatomical Museum in Berlin, but this could not be done as it was completely smashed.

427. The Indians who had run off had already spread the news of our doings and frightened the whole village. Everybody avoided and watched us with scared looks: it was unmistakeable that the trust hitherto reposed in us was now entirely replaced by a secret dread.

428. When the boy was informed through chief Caberalli that he would have to accompany Mr. King to Georgetown, he took it quite indifferently and exclaimed quite unconcernedly, "Why should I not accompany him? I have only done what I had to do, the white people therefore cannot punish me." The more calmly Maicerwari received the news the greater was the stir among the villagers and strangers, but especially the women. The trust already shattered was undoubtedly changed to mistrust, because judging from their own views of the case, and therefore not believing that the tragedy by itself alone could possibly be the one and only inducement for our course of action, they naturally suspected that we must be influenced by some other. Although Maicerwari, by his manly disposition had earned considerable respect in the village where he had become its favourite to a great extent, he had no support to expect from his nearest kinsmen, and being without parents, brothers or sisters, probably without any relatives at all, recognised that he was thrown on his own resources: these circumstances favoured us and resulted in no open opposition being shewn to Mr. King's orders. Had the poor boy but the remotest idea that, robbed of his freedom, he would be languishing a whole year in prison, he would certainly have saved his agony by taking to flight, yet the conviction that he had only performed his duty and done no wrong spared him that dread: without raising any objection he accompanied us a few days later as our attendant on the journey to the Barima.

429. On account of our rather lengthened stay among the Warraus who were collected here in such numbers, I got to know their manners and customs fairly accurately. In the following notes I am accordingly endeavouring to paint a true picture of them, and in order to do so, have utilised everything that I learned both from what I observed myself then and subsequently, and from what I gathered after careful oft-repeated enquiry.

430. The Warraus or Guaranos inhabit exclusively the coastal areas between the Essequibo and Orinoco, over which their settlements with a population of 1,650 individuals extend barely a hundred miles inland. Earlier travellers have stated it is true that, during the rainy season when the coastal regions are entirely submerged with raging floods the Warraus took refuge in the trees on the high tops of which they raised their houses: nevertheless we never saw them in an abode of this description although, during our stay among them, the spring rains poured in torrents, and the streams rose far above their banks. On the other hand we indeed often found their primitive houses erected on tree-trunks cut off at a certain height from the ground and covered with pieces of wood to form a sort of platform that secured them from a fairly high rise of water. Whether the Warraus occupying the banks of the Orinoco have a different custom I cannot say because I have not visited a settlement of theirs. The build of body and whole

appearance of the Warraus, their uncleanliness and indolence, I have already sketched in previous accounts: their inner nature completely corresponds with their outer appearance: their eyes and features only too distinctly show that their intellectual faculties are still slumbering. Immediate want urges them to its gratification, the next hour being beyond reach of their mental ken. Mad jealousy and an implacable thirst for revenge that persecutes single individuals just as much as it does whole tribes and societies, are the only passions which these crude children of nature give way to, and which, often controlled with calculating cunning for years, suddenly burst out and prove the source of bloody tragedies. All hurts pass unnoticed with none of their angry passions rising, but without ever being eliminated from their memory. The time that the Warraus do not devote to hunting or fishing they spend idling in their hammocks, or playing with their hunting dogs; their only amusement, moreover, they find in their cane flute. Game and fish constitute their chief nourishment, though they do not disdain rats, monkeys, alligators, frogs, worms, caterpillars, larvae and beetles. They are surprisingly adept in catching fish, which they capture partly with hooks, partly with bow and arrow, or kill with light spears. If the capture prove greater than the requirement, some of them will sundry the surplus and bring it to town for sale, but such industrious ones are only rarely met with. Meat, under these skies, turns bad within two or three hours, and if they want to keep it awhile for further use so that, released from the chase, they can enjoy undisturbed rest, they build a small staging about four-foot high with cross pieces resting on the top of the four corner-posts stuck into the ground: they spread the flesh on this, the women keeping up a moderate fire beneath it for from 20 to 24 hours. By this means the meat keeps good for some 5 to 6 days, but dry and without nourishment—this is especially the case with four-footed animals.

431. The Warrau it is true eats little at a time, but therefore all the more often. The usual hours for meals are 6 and 10 o'clock of a morning, at noon, 3 in the afternoon, and the last one at sundown. Of these five meals the first and last are the most copious. The wives are only rarely permitted to eat in company with the men, and in the presence of strangers are never vouchsafed this honour: I subsequently noted that this rule holds good among all the tribes. Game is cooked in the blood of the animal, and strongly seasoned with *Capsicum*. If weather permits, the Warrau takes his meal in front of his house. The wives place the dish on the ground, and close by, a sort of plaited plate, with the bread: after they have withdrawn, the men, squatting on their heels, range themselves around the steaming pot, steep the bits of bread into the brew and endeavour, with the help of their fingers, to pick the meat from out of the vessel. As the five fingers sufficiently suffice for this service, forks are naturally superfluous and unnecessary articles of luxury. As soon as one's hunger is satisfied, he leaves the circle. When the last male member has "left the table," the wives approach and must be content with what is left: they nevertheless know how to secure themselves against loss and accordingly make sure of Number One by means of a lot of little pots which, filled with tit-bits, are hidden

away in all corners of the house, and, after the men have retired, afford them a more abundant meal.

432. Polygamy is commonly indigenous among the Warraus. Every Warrau takes as many wives as he can support, or rather believes to be necessary for looking after and attending to him. The chiefs mostly possess a regular harem. Wedlock takes place at a very early age, and I have often seen mothers who could hardly be eleven or twelve years of age and yet possessed children of from one to two years old. Marriage is not consecrated by any religious ceremony. The girl's parents make a choice of bridegroom already of tenderest age and later on hand her over to him without further formality. From the day that the daughter is destined for him, he has to work for her parents until his entrance into manhood. In this interval he showers every attention on his youthful bride, decorates her with beads, and brings her the best of what is procurable in the chase. As he becomes a man, he takes her to where he thinks of building his house. When such a mutual arrangement on the part of the parents has not taken place, the young people follow their own inclinations. A visit to the house of the girl of his choice and a few presents are the first distinctive signs of awakened or already long-cherished love. If the plans of the parents are in full agreement with the wishes of the wooers, the daughter will either become his for a fixed present or be handed over to him by the parents upon the fulfilment of services to be performed for them. In the latter case, according to the value set upon the bride, he has to work for a year or still longer for her parents.

433. On completion of this term the young husband clears from bush and trees a sufficient piece of land, and hands it over to the young woman as her provision field which she now further cultivates and tills. The man acquires his second, third, and fourth wife by means of gifts. When the wife gets old, and this usually takes place already by the twentieth year, the husband looks for another among the little girls of seven to eight years of age: he hands this child to his eldest wife to bring up, and the latter teaches her everything in the way of domestic duties until she arrives at maturity, when she enters upon all the rights and duties of the marriage state. But whatever number of wives a Warrau may possess, yet the one first taken unmistakeably sways the sceptre before which all her successors have to bow in matters of domestic concern. The house-master usually has one or two favourite wives whom he never lets away from his side but who accompany him on all his excursions.

434. Outside of hunting, fishing, and the manufacture of his weapons and corials, the man considers every other occupation beneath his dignity. On his return from the chase, or on completion of any other business, he throws himself in his hammock and, swinging to and fro, regards with indifference the labours and anxieties of his wives as they attend to the house and field, manufacture the earthen pots, plait baskets and mats, and attend to their children of tender age.

435. While their lord and master, still steeped in idle dreams is rocking in his hammock of a morning, the wives have left theirs long before and, after bathing in the stream close by, prepare the breakfast.

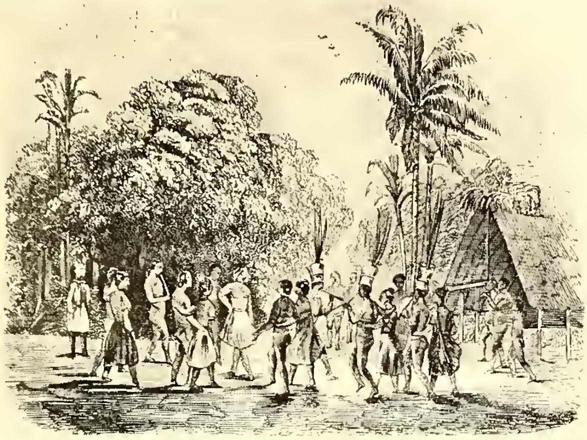
436. The simplicity of their lives, their scanty requirements, and the ease with which the latter can be satisfied, because Nature freely and

plenteously offers them practically everything that they hold dear, leave the greater part of the day unoccupied. From out of his hammock the Warrau hastens to his meal, and back again when finished: in it he sleeps, blows his simple reed-flute, or pulls out the scanty hairs of his beard. In his hammock he carries on conversation with the occupants of his own and neighbouring houses, or admires his beauty if he owns a looking glass. For hours at a time he gazes with gratification in the eyes of his double, wherein he finds the most faithful servant of his vanity and with pride that is never satisfied daily admires the picture afresh. As master of the house he thus passes the whole day in indolent repose in a condition between sleeping and waking: already roused in the earliest hours of the morning he tries to dispel the ennui until break of day by keeping up a conversation with his neighbours, an evil habit which, when we first went to stay among the Indians and before Time made us indifferent to it, excited our lively indignation. The slavish service of the women is not even interrupted at night: from sundown until daybreak they keep the small fires burning underneath the hammocks, to drive away the mosquitoes and keep the house warm.

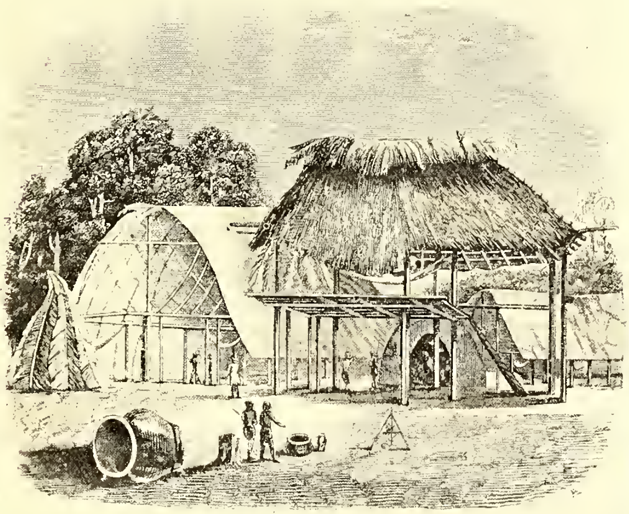
437. For the rest, a few features in the social life of these children of nature show that feelings of chastity and the sense of shame lie deep-rooted in primitive human nature. This is especially the case with the women: they appear retiring in the presence of strangers, disclose a shy modesty (which is less conspicuous among the men) in their gait and bearing, and as soon as their accouchment begins to draw near betake themselves out of the village where their husbands and relatives reside. Alone, in a house in the forest, they await their time, which is without danger for them, and return with the new-born child to their own people, without having claimed outside assistance.

438. Upon one of my excursions I myself came across such a lying-in woman who was contemplating with the deepest maternal love the little citizen of the world that had just been born. The colour of the baby's skin was almost as white as that of a European girl, except that the white verges slightly into yellow. The mother divides the navel-string with her teeth, and ties it with a thread made from *Bromelia Karatas* fibre. The Warraus, however, do not seem quite to understand the tying business as yet, because almost all kinds of abnormalities are to be seen at this spot.

439. After the mother has bathed herself and the new-born child in the neighbouring stream, she hurries back to the village, where the father of the house receives the congratulations of his friends, while his wife goes about her business as before. It is strange that the children are usually weaned only in their third or fourth year, so that the elder often stands quietly in front of its mother, and takes its accustomed nourishment from the one breast while the younger in its mother's arms is sucking at the other. It nevertheless looked extremely laughable when such a strapping youngster, as the one we had just noticed in the extreme top of a *Carica Papaya*, suddenly climbed down the tree and laden with its fruit hurried off to quench its thirst from mother. Our astonishment however was still further increased when we noticed four-footed foster-brothers and sisters among the sucklings, to which the mother, while perhaps her own child was already sucking nourishment



Warrau - Tanz



Karaiben - Niederlassung

WARRAU DANCE AT OREALA ON THE CORENTYN.

CARIB SETTLEMENT AT TOMATAI ON THE CORENTYN.

out of the one breast, just as readily and with equal fondness in face and feature, would give the other. They were mostly young monkeys, opossums, labas, acuris, and the like.

440. The pride of the women consists mainly in the possession of a large number of tame domestic animals. What young mammals they can therefore catch, they bring up on the breast, with the result that so great an attachment is implanted in the creatures, especially the monkeys, that they will follow at their foster mother's heels.

441. So long as the child cannot yet run, it is as it were an inseparable portion of the mother's body: where the mother goes, there will the child be, whether it be now carried on her back or on her arms. Later on, it leaves her, goes its own way and mixes with those of its own age, till the longing for its customary food again leads it back to her for a few minutes.

442. Boys and girls from their earliest youth seem to be adept at everything, particularly climbing, swimming etc.: I found little girls of from four to five years of age often on the highest trees. The first thing that the boy takes to when he arrives at the age of reason, are the bow and arrows made for him by his father or elder brother and the acme of childish pride is reflected in his sparkling eyes if the arrow hits the chosen target, small lizard, grasshopper, etc. He attains so much vim, vigour and versatility by tumbling about upon the trees, I might almost say by living continually amidst the denizens of the forest, that he can soon accompany his father when on the chase and when catching fish.

443. At just an early, if not earlier age, the little girls assist the mother in the duties of the house, help with the baking of the bread, and preparing the favourite drink, accompany her to the provision field, and carry back to the house loads of cassava root under which a European girl of twice the age would sink to the ground.

444. Though the child is paid really but little attention by the father, and on the other hand is almost foolishly beloved by the mother, both nevertheless equally firmly fight shy of inflicting any corporal punishment on their children, and even allow the more serious faults and offences to pass unchastised.

445. The tatu-ing, boring of the ears and nasal septum takes place immediately after birth, and the holes are kept open with little pieces of wood. Of all the many games which are otherwise everywhere native to children, I did not notice a single one among the Indian boys. One sees the smaller ones like strapping hobgoblins tumbling around in the dirt or else shooting with their little bows and arrows, while the larger ones at most strive to, or do actually, take part in the dances of the adults. It was curious to note the panicky fright to which we, but particularly our Blacks, gave rise. So as noways to come into touch with us, they often went a long way round, and if I even stepped unnoticed into their houses, it was then nothing else than as if the Evil One had got them all by the scruff, when they scampered off shrieking and squeaking like chaff before the wind. Even the semblance alone of one of us wanting to rush their house was sufficient to drive them to the other side of the provision field.

446. Unfortunately the majority of the poor little chaps suffered already in their first year with bad kinds of eye-disease, and were so stiff with dirt and dust that it was a wonder to me how they managed to move their fingers. To protect them, to a certain degree, from mosquito bites, the mothers smear them almost daily with crab-oil which is squeezed out of the *Carapa guianensis* fruit. Thus oiled over, the poor child runs out into the dirt, where it rolls itself about to its heart's content: and with that begins the first cuticle. Next day the child is oiled again, and with the result that a coat-of-mail of such a thickness is soon developed that the mosquitoes only waste their bites and search for blood in vain.

447. Among the Warraus the stepping of the girl from childhood into puberty is notified by their robbing her of her long hair. A festive dance is held at this ceremony when the girl appears decorated with beads and has the white down of different birds, particularly that of the *Crax* and *Ardea* attached with gum-resin to the smoothly shorn head, the arms, and the thighs.

448. The entrance of boys into the ranks of men is not so simple a matter: they have to undergo several ordeals to demonstrate their strength and worth. These consist for the most part of painful wounds that are cut into the breast and arms with the tusks of the wild boar or the beak-tip of the toucan. If the boy bears this without pulling a face or in any way betraying his sufferings by outward signs, he is allowed henceforth to rank with the men. But if the childish heart has not yet the power to control the suffering of pain by its strength of will, he steps back to his old condition, till later proofs indicate increased force of character.

449. In general, several families occupy one and the same house, without corresponding partitions or dividing-walls being found in it. The beams, from which the hammocks are suspended, the few stones to build the hearth, the household implements, which like the wants of the family are very simple and only consist of a few earthenware vessels of different size and shape, the necessary gear for the preparation of cassava bread, already mentioned, and the implements for hunting, fishing and fighting constitute the whole household furniture of a Warrau family. If, in addition to these, there is yet a looking-glass, a comb, a gun, or an axe,—well, the highest ambitions of these simple children of nature are gratified. The form of their earthenware has a classical appearance and has much resemblance with that of the Etruscans. The women build these vessels off-hand and for the purpose utilise the clay found on the banks of the forest streams: they dry their handiwork in the sun and smear it with a varnish which is prepared from the soot of pots already in use and the sticky juice of a *Mimosa*. When this is done they put the pots and dishes in a heap and light a fire around, when they let the earthenware gradually cool off.

450. The property of each single family is considered sacred by the fellow-occupants of the house: an infringement of this never takes place: they freely hand over their own goods to strangers and guests.

451. The settlements of the members of a tribe consist mostly of from 6 to 10 houses, presided over by a common chief, whose authority however is only recognised to its full extent when conflicts have broken

out with other tribes. Power and influence are here not alone based upon worth and position: this is determined by the degree of bodily strength and the spirit of enterprise.

452. Tribal relationship is never derived from the father but always from the mother: the child of a Warrau buckeen and an Arawak is regarded as a Warrau. By the law of tribal-claim that of inheritance is also regulated. The sons of the chief's daughters inherit the honours of the grandfather and not his sons, although this is not by any means strongly insisted upon, because at the chief's death each one who feels in himself the strength and ability for the honour may arise as pretender without the late sovereign's family feeling their rights infringed or demanding satisfaction. The Piai, Piatsong or Paché who is at the same time sorcerer and doctor is regarded as the second important personage of every village after the chieftain. The Warraus regard these Piais with all the greater esteem and awe since the pride of their tribe is bound up with them: they believe that their own sorcerers and doctors are mightier than those of other Indians.

453. In their religious convictions almost all the tribes of British Guiana correspond, at least in their main points. An infinitely sublime Being is the creator of the world and of mankind, upon whose activities however the regulation and preservation of the world has so much claim, that he cannot specially worry over the individual.* Gentleness, benevolence, and kindness to his creatures are the chief attributes of this supreme Being. Every pernicious influence that interferes with the rest and happiness of his creatures—*e.g.* sickness, death, famine, in short, every misfortune of life—cannot in the same way be traced back to him, and accordingly, from the rough separation between Good and Evil, Happiness and Misfortune, it must have another source. The source of all the Wickedness and Bad is a host of subordinate Beings, whose only pleasure consists in bestowing misery, strife, hatred, and sickness on the human race. The Good is only a single Something, and though it indicates its presence in different forms, it nevertheless unites into one general feeling of Happiness, and hence there exists only one Beneficent Being, the original source of creation, the prime source of all Blessedness. With Evil, on the other hand, the question is different: heterogeneous in its expressions, and always appearing divided and sporadic in the interruption of repose, it cannot be the outlet of one Power, but must be the effect of the manifold forces of Evil Spirits. These Beings, malevolent to mankind, the authors of all disease, and every hardship, these spirits enjoying another's misfortune, whose happiness is the pang of mortals, bear among the Warraus the name of Yawahu.†

454. Amongst all mortals, the power is alone granted to the Piai or sorcerer, through his secret arts, to counteract these damaging influences or to remove them to a distance. Every settlement possesses but one such medicine-man, who, initiated deep into the nature of the world

---

* It is only fair to state that this is not the generally accepted view among ethnologists nowadays. See Roth's "Animism and Folk-lore among the Guiana Indians." (Ed.).

† There is evidently a mistake here: Yawahu is the Arawak term, Hebu the Warrau one In section 455, the Warrau Piaiman's rattle is rightly called Haepu (Hebu)-masaro. (Ed.)

of demons with which, so to speak, he is in continual rapport, makes them dependent upon him and slaves to his forms of exorcism. The Piai is also priest, doctor, and sorcerer at one and the same time, a powerful and feared individual who has it within his control whether to allow the persecution of his subject spirits to run a free course, or to grant protection from their influences.

455. If a person in the village is sick, one immediately calls in the Piai: he begins his exorcism in the evening for during the day he is powerless and may only call upon the demon at night. The chief instrument for this purpose consists of a sacred rattle (Haepu-masaro)† which no profane hand dare touch without robbing it of its supernatural powers and making a child's toy of it. It consists of the cleaned-out gourd-like fruit of the *Crescentia Cujete* Linn. in which small round but therewith dissimilar openings are cut, while the whole is painted with different colours. A long piece of wood which is run through the emptied fruit and projects about a foot on either side, serves at one end as a handle: the other is wound round with an accurately prescribed number of wing-feathers of the *Psittacus aestivus,* the tips of which are turned towards the calabash. In the cavity itself are to be found several small stones, bits of agate, and some variously coloured seeds.

456. Immediately after sundown the Piai commences his incantation with this magic rattle, after having previously carefully quenched every glowing ember inside the house, and removed its occupants. In varied time, sometimes faster, sometimes slower, he now swings his rattle round his head in a circle to the accompaniment of a monotonous song the tune of which is regulated by the rapidity of the swinging. These introductory incantation-formulae one can often hear for more than an hour. It is not to be denied that the sorcerer thereby seeks in many various ways to make the spirit subservient. The voice is soon raised and seems to give an imperious order to the demon. It soon sounds softer and sinks into a light almost inaudible whisper to soothe with soft speech and entreaty the disfavour of the stubborn sprite, and along with this the Piai puffs tobacco smoke out of a consecrated cigar and blows it at fixed intervals into the patient's face. If rain falls during the ceremony, the medicine-man immediately ceases from his labours, and resumes them again on the following night. When finally the strength of the incantation-formulae has succeeded in forcing the spirit's presence into the house which according to the power possessed by the Yawahu [Hebu] happens sooner or later, then the second act of the work of deliverance begins, the Piai transacting business with the refractory demon. During this procedure two different voices are always to be distinguished, though the contracting parties take care that the particular words are unintelligible to the invalid. The strange voice is stilled, and the medicine-man is able to give the anxious patient an account of the cause of the Yawahu's [Hebu's] anger and the nature of the sickness. This explanation is at the beginning of the illness very confused and ambiguous, like the most profound of the Pythian oracles. If the symptoms of the disease increase, if they assume a dangerous character, so is the

---

† i.e. the Evil Spirit's Rattle. See Section 453. (Ed).

exorcism ceremony repeated every evening, until Nature herself lends help and mediates a favourable crisis. The might of the Piai has now forced the Yawahu [Hebu] to tell him everything: this is of help to the patient because the real seat of the disease is now known. The Piai approaches the hammock, puts his lips to the painful or most painful spot and sucks away at this until after a time he draws out with his mouth a number of fishbones, pieces of bone, thorns, etc. which the revengeful and destructive Yawahu [Hebu] had by means of his black art hidden inside the patient's body. The invalid's imagination now completes the cure. A few remedies, mostly juices of plants, are employed to be sure: the Piai however puts a value on them only in so far, as he dare hope, that they thereby hasten to make the Evil Spirit confess.

457. But if the incantations manifest no power and every remedy, drink, or form of sorcery fails to curb the Yawahu [Hebu] and the invalid finally dies, several ways of course remain open to the Piai to save his face and explain the unfavourable issue. The invisible world of spirits is ever too powerful than to fear the weak race of men and the disturbing influence of a Piai besides. Again, if the invalid or one of his relatives or fellow-tribesmen has injured another Piai and aroused his vengeance, the latter opposes exorcism to exorcism, and thereby frustrates the efforts of his fellow craftsman. It is not to be denied that the latter reason supports the reputation of the Piai in general: one of these godly men thus always refers to the power of another and, while any person humbles himself before the one, he recognises the power of all. When the sick man is laid to rest the Piai buries his rattle with him, for it has henceforth lost its effects, the curative agency of the magic remedy dying with the invalid.

458. The profession of a Piai remains hereditary in his family and always passes on to the eldest son whom the father privately initiates into the mysteries of his future dignities: when at last the father finds himself too weak to contend with the spirits he hands the business over to his son under various ceremonies and consecrates him into his calling at a festival. Amongst the ordeals to which such a candidate must submit is especially the one of swallowing large quantities of strong tobacco juice. He cannot venture upon making any claim to his father's honours unless able to imbibe at the public installation and act of consecration a whole calabash-full, without letting nature rebel against the hellish juice, or any muscle of his face betray his inward abhorrence. If the Piai does not possess a son, he selects a friend as successor, who has to undergo a long term of instruction before being permitted to submit to the ordeal.

459. Like the Brahmins of the East Indies, the dignity of the Piai is attended with restrictions and burdensome considerations. For instance, he must not eat the flesh of the larger animals, and must limit himself in general to what is indigenous to Guiana: all kinds of animals introduced by Europeans are debarred from his table. Remaining rules regulating his food are no less severe. Successful cures are remunerated by the patient in various ways.

460. There is a generally-spread belief in the continuance of the soul after death, in a life of undimmed happiness and everlasting pleasure be-

yond the grave, both among the Warraus as well as the different tribes which I subsequently found opportunity of studying.*

461. The morality of the Indians has become specially imperilled by the taste for liquor: it brings a new element into their crude souls and poisons the sources of their virtue. Europeans have been blamed for making choice of this terrible means to break the old-time strength of the tribes and so render them tractable through weakness: but this is not quite correct. Though the evil has indeed increased since the appearance of the whites, whose self-interest has not remained innocent in the corruption of these people, they have not alone caused and introduced the vice which now reigns to such an awful extent amongst the Indians.

462. Before the discovery of America these races were already cognisant with intoxicating liquors which they prepared from palm-fruits, cassava-bread, maize, and potatoes, while the Paiwari, still up to now the favourite intoxicant of all the aborigines who have not yet entered into intimate and regular relation with Europeans, is an inheritance from the primitive times of their forefathers. Paiwari is made out of cassava bread. For this purpose, the bread is baked thicker and much harder than usual, so that the outer crust gets almost quite charred. After breaking it up, the pieces are thrown into a big vessel and boiling water poured over them. As soon as the mass has cooled, the women keep on stirring it round with their hands, and chew it handful after handful which brings it to a regular pap, to be spat into a second jug: by this dirty means the fermentation is said to be hastened and the drink to gain markedly in intoxicating power. While the mass is still fermenting it is mixed with the juice of the sugar-cane and sweet potatoes.° A second drink, which is equally intoxicating, is prepared in the same way out of sweet potatoes without further additions, but here the jug is carefully covered with plantain-leaves.

463. The *Mauritia flexuosa* Linn. is a most useful tree for the Warraus. There is hardly a portion of this magnificent palm that is not utilised for economic purposes by the aborigines, for which reason the description given of it by missionary Gumilla in his account of the Orinoco as the "Arbol de la Vida (Tree of Life)" is quite intelligible. The fan-like fronds supply the Warraus with a covering for their houses, the frond-fibres are made into hammock thread, and changed into rope, the pith contains a sort of sago which, especially with a failure in the cassava crop, constitutes their daily food, and the sheath-like base of the leaf-stalk gives material for the simple sandals of the savannah residents. Moreover, the fruits, something like fir-cones, after soaking for several days in water, afford a tit-bit that is much sought after, and the delicious sap of the tree which, pressing out of the openings made in the trunk for the purpose, easily changes into a very intoxicating wine-like drink. Why, even after death the palm continues to serve the Indians: it forms the store-house of a new dainty for them, the larva of a large beetle (*Calandra palmarum*) which customarily lays its eggs in the dead trunk. These

---

* See Roth op. cit. (Ed.)

° The Macusis use neither one nor the other in the manufacture of their Paiwari. (Ed.)

larvae, held in high esteem by the aborigines, have quite the shape of our may-bug grubs, but are certainly as large again.

464. The Warraus have no fixed division or method of computing time at all, and hence the practical impossibility of stating with certainty how old an adult or grey-head may be. If one judges the approximate age from the features and especially from the whole general appearance, or from the white hair which otherwise is usually rare, the estimate is nevertheless deceptive in many cases of old and young, particularly when applied by Europeans who do not always bear in mind the variations in these strange natures.

465. They borrow a dubious and, within narrow limits, restricted classification of time from the phases of the moon and the rainy seasons: but if their observations exceed the number of fingers and toes, the annals are closed, and everything receives the term of "many." If they want to express a large number, they lift up as much of the hair of the head as they can seize in the fingers. All measures of the past they date from some occurrence or other that had exercised an essential influence upon their lives or upon their ways of looking at things (*Anschauungsweise*), and I am quite convinced that with our visit there dawned a new era for all the tribes with whom we came in contact: this new epoch will last until some other important event forces the remembrance of our presence into the background.

466. They also showed equal inexperience and want of calculation in determining exchange values for the objects they offered us, even up to the last day of our visit at Cumaka. In barter like that, their immediate requirement or spontaneous desire forms the basis of the article's worth. Thus one Indian will ask a gun, an axe, etc. for some object or other which another standing close by will exchange for a couple of fish hooks, some beads, or a comb. No one can imagine even remotely the disproportion in value that exists between what the two men require.

467. The time of our departure from Cumaka was drawing nigh, and we commenced arranging our baggage afresh. Warned by the experience of former travellers in the tropics, I had packed my natural history collections in almost hermetically sealed boxes and hoped to have protected their contents completely from the damp. Now that we were proceeding farther and farther away from the coast and could manage without the water-casks, my brother handed these over to me: they formed homes for my living orchids, and relieved me of the care with which I had hitherto looked after them. The bottoms of the casks were knocked out, and the pride of my collections, 83 different species of living specimens, placed inside.

468. Arrangements were completed by the 14th June, and in the evening I stood full of hope over my well-packed corial: for the following day would decide whether it corresponded with my expectations. The collections included the first results of my labours on behalf of the Natural History Institution of my native country, and I readily dreamed of the days when I should once more greet in Berlin these children of the wilderness: I already saw in my mind's eye several of the beautiful orchids making one of the loveliest shows of the orchid-house in the Botanical Gardens at Schöneberg.

469. My three Warraus whom I had hired as paddlers were strong and smart men, and the friendly relations existing between us gave promise that they would exert themselves to the utmost in carrying out my wishes. My joy was increased by the thought that I was now an independent gentleman and a ship-owner, and could also hurry on ahead of the noisy and disorderly flotilla. My clamorous companions had often frightened far away into the distance the mammals and feathered occupants of the banks long before I could get within gunshot, they had also taken no notice of my requests to wait a minute for me to loosen from off the trees standing close by the orchids that looked so tempting amidst the green. I could now follow my own inclinations, hurry ahead, or remain behind the little flotilla, secure the unsuspecting residents of the banks, or gather the lovely blossoms from the trees: an extra effort invariably brought us up with our companions shortly after.

470. On account of Caberalli, the Arawak chief, as well as Maicerwari, having to accompany Mr. King to Georgetown, the little fleet, my boat included, was increased by three corials, because the proud chief could not appear in the capital without an escort proportionate to his dignity.

471. Sunrise saw the whole of Cumaka, which is situate in 8°12′2″ lat.N. and 59°44′ long.W., in the most lively state of confusion. This one had forgotten something, and hurried off to fetch it, that one wanted to see the white people once more, or press Maicerwari's hand again in farewell, while another lot hustled off ahead to the landing, or were now streaming towards it.

472. The vivid picture presented by the river banks showed up also in the boats. Innumerable tame monkeys and parrots which the crews had bartered to take with them to Georgetown, sat with one foot tied, upon the perches for which every vacant space was utilised and raised their shrieking screamy voices in noisy chorus. Nevertheless I had taken into my boat eight such unruly passengers: they seemed to feel the pangs of parting from their recent homes and to share the melancholy of the women who had minded them ever since they were fledged.

473. Everything was finally arranged, everybody had fallen into place and amidst the shouts from the Cumaka villagers and visitors collected at the water-side,—shouts which our corials returned with equal vigour—the crew set their paddles going and our acquaintances on shore soon passed out of sight. Struck with astonishment, our feathered friends of many colours cast wondering looks at the rocky motion and apparent flight of the trees and banks, their red shiny pupils now enlarging, and again diminishing. The cry of joy with which certain of their mates greeted the early morn and matutinal sun-beams as they winged their way over the river, called upon them to follow: their fetters alone stemmed their flight which they had to limit to a lively flapping and increased screaming. Such frustrated attempts were usually followed by violent conflicts among the captives themselves, squabbles which the voices of the Indians could hardly allay: every note of their free brothers upon the trees along the banks occasioned fresh fluster, confusion and noise.

474. We soon reached to where the Aruka discharges into the Barima, along which we continued our journey upstream in an East-South-

Easterly direction. As a result of the almost incessant rain its banks were no longer in a condition to regulate and curb the mass of water and our paddlers had to exert all their efforts to resist the force of the dark waters bearing down on them. The vegetation towering above the surface of the water, *Rhizophora, Avicennia, Laguncularia* and *Conocarpus* continued to display quite the character of a coastal stream exposed to tidal influence. Our progress also felt its effects for, with the entrance of the flood, the waves which had hindered our advance, started to stream in the direction we wanted and our corial followed in rapid course.

475. Evening soon drew nigh and found us still searching in vain for a dry and safe spot where we could light a fire and sling our hammocks for the night: we saw nothing but a huge stretch of water until at last, a cry of delight on the part of the Indians showed that they had found one. We noticed on our right a dark place prominent above the water, and we eagerly paddled in its direction. Several palm-trunks laid one over the other showed that the situation had already served as a night-shelter for travelling Indians, and although the last few days' rising flood had already repeatedly submerged this temporary bridge, and the spot was hardly visible above the surface of the water, we nevertheless determined to put in here: naturally not even a comfortable fire was permitted us, because the heavy showers of rain in the afternoon had soaked the wood, and all attempts at lighting it only produced regular thick clouds of smoke, but no flame. Even Hamlet, the imperturbable and indefatigable Hamlet lost his temper: his subdued cursing betrayed the bitterness with which he regarded the moist timber, and he ineffectually squandered the breath of his powerful chest in trying to provide the fire requisite for a warm supper.

476. The myriads of mosquitoes, the distant din and crashing together of the trees on the riverside uprooted by the flood, together with the noisy fall of rain banished sleep from our eyes and made the night one of the most horrible through which I had yet had to keep awake.

477. With darkness hiding the swelling of the stream, we were not a little surprised when an Indian, who by chance had left his hammock before dawn, called to warn us that the waters had commenced to sink the camp. We naturally hurried as quickly as possible to our corials, while Hamlet, swearing away, was searching for kitchen-ware in mud and water mixed. "Well! I'm damned," he called out: "everyone wants me to help him with his feed, but nobody wants to help me with my pots and pans."

478. After reaching the edge of the bank, we followed it, very glad at having escaped the insidious water. Countless swarms of the dainty swallow, *Hirundo fasciata* Lath., joined in our rejoicings: they had perched upon the barren branches of trees, long since sunk, projecting out of the water, and flew for a few minutes from their favourite resting-places as we approached, but quickly returned almost before we had passed.

479. In the course of this monotonous day during which we only came across isolated specimens of the large king-fisher, *Alcedo torquata* Linn. Gm., we reached the mouth of the Kaituma which flows into the Barima from the South on its left bank. According to the edging of its shores, the width of its mouth must amount to 200 feet. My Warraus informed me that the Kaituma banks were occupied by Warraus and

Waikas and that it was also connected with the upper Barima by means of several forest creeks of which a large number poured here into the main stream.

480. We would have searched again in vain to-day for a place to camp in, and have therefore had to continue travelling all night through torrents of rain, had not our boat-hands exerted their very utmost to reach the Warrau settlement of Honobo if possible before sundown.

481. The sun was still on the edge of the horizon when the dull thud of Indian drums and the distant sound of distracted singing were wafted to us on the breeze. The first notes to be recognised worked like an electric shock on the muscles and nerves of our paddlers: the boats sped fast towards the tempting tune and the delicate ears of our Indians soon divined that the Warraus were gathered for a drinking party. The gallant pullers, dumb and sullen up to then, felt cheered at the prospect of the Paiwari awaiting them, and naturally encouraged one another to bestir themselves.

482. We soon reached on the left shore the mouth of the Honobo, a small forest stream on the bank of which the settlement of the same name was situate. The high level of the water rendered it easier for us to follow its snake-like course and after a short while Honobo village lay before us on a small hummock. As our Indians recognised the first house-roof, they burst into a general shout to notify the residents that fresh guests were about to glorify the feast. This attracted the villagers in a body to the landing, where they greeted us with a turmoil of wild delight. In the centre of the company we noticed a figure in European clothes, on either side of whom stood a man with a drum, and the closer we came the louder they beat their instruments.

483. In the midst of this deafening din, we jumped ashore where we were welcomed by the dressed-up individual, chief Marawari, who immediately stepped forward from out the midst of his wives. The first look at him showed that the Paiwari had preserved its strength and almost overpowered him. Some of his spouses had also allowed themselves to be so carried away in the general rejoicings that they found it just as difficult to keep their balance as their lord and master. Accompanied by the tottering and staggering populace we reached the settlement that consisted of five houses surrounded with flourishing provision-fields. On looking round the buildings, of which, at the invitation of the chief, we were to pick one for our stay, we noticed several individuals who had already become a sacrifice to the awful brew, and succumbing to it, had betaken themselves back into their quarters. Scared at the sight, we were just about to pitch our tent when the wild screams of a woman once more excited our curiosity and led us to one of the houses where we heard a buckeen raving inside a closed hammock. We learnt from Marawari that it was one of his loving wives who had drunk more than she could carry: when the sewn-up duenna noticed that strangers were close by, she started yelling still louder and at the same time exerted all her strength to free herself from out of her straight-jacket. The lord and master seemed to have learnt from repeated experience the most effectual palliative method for mitigating her awful screams. He set the hammock rocking violently, a movement that was further increased by the obstinacy of the beauty inside. The shrieks of the prisoner became ever weak-

er, and soon gave way to other sounds which only too clearly indicated that the drink swallowed in superfluity had discovered an outlet.

484. Caberalli informed us that this was the usual method in similar cases. "If the drink at our feasts," he told us, "commences to take effect and give rise to quarrels, we try to get the angered parties close to the house, where they are unexpectedly seized, and sewn up so tightly in their hammocks, that no exertion, no struggling can free them. The continued swinging increases their giddiness and after a short while their passions die away in a deep sleep." Truly an excellent method worthy of being copied in many a society in Europe. Though I had come across people as passionately fond of intoxicants as those at Cumaka, I had never yet seen any so overpowered and no longer master of their senses.

485. The delight of our Indians was soon turned into extreme annoyance, on discovering their hopes of joining the feast shattered owing to the drink having been drained to the last drop, although the huge trough appeared to have contained at least 200 quarts. In front of the chief's house lay an immense heap of pressed-out sugar-cane the juice of which had been used in its manufacture.

486. In their talent for imitation, the Indians could only be beaten by few other peoples, the simple sugar-mill we saw here affording a fresh demonstration of it: it was decidedly a facsimile and fulfilled its purpose admirably. Two strong side-posts several feet apart were rammed tightly into the ground: between these posts were fixed two strong rounded tree-trunks that almost touched each other, and could be revolved by two winches with ease. When they want to squeeze out the juice, each two of four women take a winch and set the rollers in motion, while a fifth puts the cane-stump in the intervening space between, the expressed juice being caught in a vessel beneath.*

487. Half an hour's quiet had hardly been restored in the hammock when the yelling in it started afresh: the lightening of her stomach and the effects of our strange appearance may have moderated her intoxication somewhat. The wide meshes of the hammock allowed of her satisfying her curiosity and I don't know what sort of terrifying picture her drink-bedimmed fancy painted at sight of our white and black faces, but her yelling increased to such an extent that we begged the chief to spare our ears the awful treat and loose her from her bonds. Hardly was this done than she glared at us with eyes rolling in terror and, moving her whole body about in a ghastly fashion, pitched her voice to its utmost limits, until she was finally dragged by three of her fellow-wives to a distant house, whence the raving clamour continued to reach us long after.

488. I was extremely surprised at finding several lemon and orange trees which, together with *Bixa Orellana* Linn., and a number of *Anacardium occidentale* Linn. were growing around their houses and in their rich provision-fields. The latter were regularly covered with their fleshy luscious dark-coloured swollen fruit-stalks: these have a very pleasant sour-sweet taste and are also utilised by the Indians for the manufacture of a pleasant cooling drink. The peculiar kidney-shaped stony pericarp

---

* This form of apparatus is now practically obsolete, it having given way to the far simpler construction based on the principle of a lever. (Ed.)

is set on the tip of the fruit-stalk: a sharp corrosive oil developes between its two folds and has to be carefully removed before opening the seeds on account of its having strongly caustic properties: the kernels have a sweet pleasant taste, and are even much more palatable if roasted on the coals. Friend Stöckle seemed to have found at last in these seeds something that the Wurtemberg hazel-nuts and sweet chestnuts, of which he had already told me so much about, bore no comparison with. After enjoying a treat with the roasted ones that we had given him, he wanted to try them fresh and raw. Careless as ever, he dreamt of nothing suspicious in the harmless kernel, and before he could be warned had put one in his mouth, with the result that a spectacle similar to the one that had presented itself in his unfortunate attempt at angling on the Orinoco was now repeated. With mouth alternately closed and gasping for breath, he circled round us like a lunatic, shouting anxiously for help. The caustic oil had so burnt his lips and tongue that both became quite black and within a few days were completely skinned. He took another oath: on the Orinoco he had sworn never to touch a fishing rod again, and here he cursed the blankety seeds and declared that he would spurn them for ever. Wood that is smeared with this oil can be preserved from decay and worms. A semi-transparent gum that possesses all the properties of gum arabic exudes from the trunk of the *Anacardium*.

489. The *Crescentia Cujete* Linn. which I also saw for the first time, appeared here in great quantity. The Indians prepare their calabashes or drinking-cups from the fruit of this low-growing tree: they divide it into two halves, clean out and dry, and make them into all sizes of the neatest drinking vessels.

490. On the outermost edging of the provision fields, there grew a number of flowering trumpet-trees (*Cecropia peltata* Linn.) the smooth white-grey trunks and deeply-lobed greenish-grey leaves of which formed an extremely pretty play of colour with the dark-green background of the thick forest. The limbs always branching off at right-angles from the trunk give the tree quite a peculiar appearance. The extensive ramifications of its roots that spread in a wide circle around a forest of young shoots, are the worst enemies of the sugar plantations, from which they can only be kept removed with the greatest care.

491. As we wanted to resume our journey by break of day, the whole village was already up and about before sunrise: and hardly had we jumped out of our hammocks than Marawari appeared before us accompanied by the whole of his harem, to bid us "good day," and, good gracious! surrounded by his wives in a complete suit of Nature: his own over-coat had been changed for a modern dress-one. What is the pride of a perfect drawing-room dandy as compared with the feeling of impressive worth that swells the breast of such a child of nature? Every look, every expression of his swarthy countenance, every movement of his body betrayed the keenest gratification of his vanity and the arrogant confidence in himself. To make the already happy fellow still happier, if that were possible, we enriched his wardrobe with a few odds and ends that were still lacking, and found our reward in the liveliest expressions of delight on the part of the vain soul. So that the harem, who

contrary to all the rules of gallantry had been slighted, should not depart quite empty-handed, we gave the beauties at least a few strings of beads. Curious to see the disturber of yesterday's peace, we asked Marawari to produce her: he pointed to his eldest wife who, still shy, was hiding behind the younger women.

492. The black lips of poor Stöckle to-day presented a truly awful sight, which became still more ghastly through the fearful facial distortions consequent on the stinging pain. Our kindly cook, Hamlet, also sneaked up to Dr. Echlin and complained of a terrible stomach-ache which, as we learnt on closer investigation, was also the result of too much indulgence in the fruits of the *Anacardium,* the Cashew of the Colonists.

493. Immediately after sunrise we left Honobo and turned back into the Barima. And the farther we followed it up the more it lost its character of a coastal stream. The *Rhizophora, Avicennia,* and *Conocarpus* gradually disappeared, to be replaced by *Mimosae, Rubiaceae,* and *Laurineae.* The banks were beset with pleasant underwood which, with its copious branches often covered whole areas of the water-edge. Besides the scarlet-red brushes of the magnificent *Combretum laxum* Aubl. and *Cacoucia coccinea* Aubl. the large white plume-like flower-clusters of the *Inga* were especially conspicuous in this river-side covering, the surest sign that the salty water and its influence upon the vegetation were beginning to disappear, although the river still continued to share in the movements of the tide except that it was visible here some 40 minutes later than in the lower reaches, and showed pretty well 6½ hours flood, and only five hours ebb. The small tributary Maruiwa or Whomana the mouth of which we soon reached forms a second waterway to the Waini in conjunction with the Waburina, Sabaina, Iterite, and Morebo.

494. Every stroke of the paddle displayed some new charm in the banks. The Inga bushes alternated in an extraordinary play of colour with *Dichorisandra Aubletiana* Schult., *Justinia coccinea* Aubl., *Ueriana Humboldtii* Spreng., and *Lisyanthus coerulescens* Aubl. The densely interwoven *Spermacoce* formed a motley-coloured screen past which the corial quickly hurried, while the beautiful blossoms of *Carolinea princeps* Linn. shone at us in the far distance, or their branches, sinking with the weight of their large and heavy fruits, bent themselves down over the stream. The peculiarly constructed flowers of the *Marcgravia* lapped the surface of the water while the large blossoms of its generic sister, the *Norantea guianensis* Aubl. proudly over-ran the highest tree-tops. A number of elegant but wholly spine-enveloped palms, *Bactris acanthocarpa* Mart., laden with their red fruits, enhanced the lovely landscape still more. In the deeper background, further removed from the riverside, the palms appeared less prominent, their place being taken by the noblest species of forest trees, where a display was made of *Lecythis parviflora* Aubl., the glorious *Dimorpha grandiflora* Willd., *Swartzia tomentosa* D C., *Byrsonima altissima* D.C., and *Eperua falcata* Aubl., from which the runners of numerous Bignonias overburdend with blossom hung down in fairy-like festoons.

495. The Animal Kingdom vied with the Vegetable for fullness. Whole swarms of those grand-plumaged birds *Ampelis rubricollis* Tem. raised plenty of chatter as they fluttered around the floral finery of the

tree tops, but my Indians who knew how to imitate their peculiar note in the most deceptive manner, decoyed them down onto the lowest branches within range of our guns. The *Ampelis Cayana* Linn. also put in an appearance, and complete chains of dainty ducks (*Anas autumnalis*) that mostly perched upon the branches of sunken trees emerging above the water, proved an easy prey for us.

496. Of all our Indian friends, my doings, collecting, and skinning seemed to afford the greatest pleasure to Caberalli, the chieftain. If I hurried ahead of the flotilla with my corial he followed on with his: if I stayed behind, he also gave his paddlers a rest. Shaking his head, wrapped in its red cloth, folding his arms and smiling, he stayed in front of his corial-tent and did nothing else but eat, drink, and with a friendly glance notify me of his attentiveness: thus contented, he never once took the weapon in his hand to help me shoot.

497. Some hills bounding both sides of the horizon, the first rising ground to be seen, showed up a few hours after passing the mouth of the Maruiwa, and upon one† on the left bank we noticed a pleasant house which Clementi the Warrau chief had erected for his own residence. It beckoned to us so invitingly that we determined to stop and spend the night under its roof.

498. As the range of hills did not directly touch the banks of the stream, and the intervening space was swamped with the flood tide and present high state of the water, we found that the river folk had built a strong durable bridge up to the foot of the rise out of the trees that had all been felled along a certain width on the flat. In several places this bridge was, it is true, so narrow that we had to keep very careful balance lest we should have to appear dripping wet before the chief. The Indians possess great skill in keeping their equilibrium and many of our companions, laden with plenty of heavy baggage hurried lightly and safely over the slender path: even the Indian carrying Mr. Hancock who, on account of the unfortunate condition of his feet, could not walk a step, trotted with his load along these narrow trunks as securely as if he were proceeding comfortably over the widest flat.

499. In spite of the noisy sport we made in endeavouring to keep our balance, nobody shewed up at the top, on reaching which there rose in front of us the desirable dwelling, a Warrau house, which markedly differed from all others I had hitherto seen: not only was it a two-storeyed one, but it was supplied with a gallery running all the way round. The chief was sitting in a stiff and starchy attitude on a stool in the centre of the building. He was clothed in a blue dress-coat with the collar turned up at the back, and in white trousers, and without getting up, gave us a long speech, the meaning of which in short was that he had already received intelligence of our coming, that we were welcome, and that he was pleased to offer us his house to stay in: the upper storey nevertheless was only intended for his friend Mr. King who in future would occupy it on his annual tour of inspection.

500. The chief's moderately large harem who were busy weaving hammocks reviewed us with inquisitive gaze. As soon as one of these

---

† Evidently the present Mount Terminus. See Sect 505.—(Ed).

hospitable ladies noticed Hamlet making a start with his cooking utensils, she brought out a number of yams, potatoes, and a calabash covered with leaves beneath which squirmed a whole lot of larvae of *Calandra palmarum* (the Grogru of the negroes). Hamlet, who ruled and surveyed everything relative to his department with the eye of an eagle, and knew the most suitable ways of serving up the most out-of-the-way things, approached me with triumphant mien and assured me that when stewed in fat this grub, which we so contemptuously disdained, would prove to be the daintiest dish upon our table.

501. Clementi occupied these pleasant quarters in company with his harem, his two step-sons, a number of lean and yelping dogs that took a long time before reconciling themselves to our presence, still larger quantities of Parrots, Hokko hens (*Crax alector*), Trumpet birds (*Psophia crepitans* Linn.), Jakus (*Penelope cristata*), and beautiful Sun-birds (*Eurypyga Helias*) which, with long-stretched neck, regarded us in surprise, and quickly flew to a distance as we drew near. The beautiful plumage—a mixture of grey, yellow, green, black, white, and brown—makes the last-mentioned one of the loveliest birds in this district so full of brilliant ones, especially when it spreads its wings and tail like a turkey-cock and lets their colours glisten and shift in the sunshine. Its nourishment consists only of flies and insects which it pursues with such skill that they seldom escape. Ever on the move and turning its head in all directions, it searches the ground and leaves of low bushes for food. Directly an insect is detected it curbs its gait, sneaks slowly on, and then by a sudden stretch of the neck quickly seizes and swallows its unsuspecting victim. I found the tame Trumpet-birds equally interesting: they were so devoted to their mistress that they followed her every step like a faithful domestic animal and all the time boomed out their deep bass notes which they have to thank for the name applied to them.

502. Hardly had we taken possession of the lower portion of the house, than curiosity prompted Mr. King to inspect his room which reduced itself to a small compartment made from the split young trunks of *Euterpe oleracea* which were fastened with vine-rope instead of nails: it was a sort of fowl-coop reached by a ladder. Immediately after our arrival Clementi had asked for Mr. King's hammock and already slung it there. Hardly had we got down again by ourselves than Mr. King, to Clementi's very great surprise, followed us with his hammock. The honour showered on him by Clementi in the way of reserved State Apartments and the slight put upon us had so tickled King's fancy at our expense that we now returned him all his over-confident chaff in the most good-natured style, when he was at last forced to exclaim:—"No, do what you like. You can tease me as much as you please, I'll stand it all right so long as I haven't to go back to that smoke-hole with the fumes of all these fires almost stifling me." His woe-begone face reflected itself in that of Clementi whose previous merriment had disappeared and whose brows had become darkly clouded: he went fretting from one corner of the house to the other, climbed up the ladder quite four or five times to satisfy himself of the truth of the reproach and finally drew the conclusion that "white men don't know what they want."

503. Hamlet's dish, the larvae stewed in fat, was tolerable. Our inventive cook stood waiting at a distance to note the appreciation bestow-

ed by us on the glorified grogru—but when he shortly after saw Glascott, Hancock and myself laying hold of the roast ducks, he angrily stamped on the ground as much as to say that the Europeans knew just as little about what tasted good as those did. The general expression of cheeriness that ruled our table to-day was still further increased at the sight of the clouds breaking after a lengthy period of gloom and mist, and finally promising us a pleasant and cloudless night, a promise in which we were not deceived. My brother hurriedly set up his instruments and soon found that Warina Village was situate 7°50′15″lat.N. and 59°24′30″ long.W.

504. It might have been about 2 o'clock when we were roused from sleep by Clementi's loud conversation with the Indians. Although this was nothing exactly unusual, such talk however had not commenced at so early an hour either in Cumaka or in Honobo. On awaking we noted that the sky had again dashed aside our hopes and had wrapped itself once more in its dark drapery. Not a star was visible, and the rain poured down anew in thick streams. To take our departure was out of the question and all Clementi's magic spells with which he attempted to master the rain proved fruitless. He stood in front of the house gesticulating most violently, as if he wanted to break off the clouds, and forcibly inflating his cheeks as if then to blow them away. He continued at this manoeuvre, until his lungs refused him further service when, by gaining renewed strength through muttering some spells, he started blowing and swinging again. We had long watched his senseless exertion with restrained laughter, till it finally gave way to such an outburst as even to silence the noise of the rain: our gaiety however did not in the slightest degree appear to upset the sorcerer's composure: it was rather a case of his movements becoming still more lively, and it was only after half an hour's efforts that, convinced of the powerlessness of his art, he withdrew peevishly into his hammock. About 11 o'clock the sky finally cleared a little and the rain slackened: this was of course due to the incantations of Clementi whose eyes now sparkled with pride and joy.

505. The range of hills stretched in a Northern and Southerly direction, N. 12° S., and S. 12° W., and the one upon which Clementi's house had been built was 70 feet above the Barima water-level. We noticed upon their slopes a flourishing growth of all the plants that are usually found in an Indian's field. The upper layers of the ground consisted of a fat, ochreous clay which was plentifully mixed with mould, pebble, and sand: this tract must be exquisitely adapted for coffee-growing because a vast quantity of ferruginous hardened-clay boulders specially assures the necessary moisture for its prosperous cultivation.

506. At one o'clock we finally left in company with Clementi whereby our flotilla was considerably increased: for besides his two step-sons and his two favourite wives he brought his entire wardrobe. This consisted of some coloured cotton shirts, a white jacket, the blue dress-coat and some white trousers: at the last moment there was even displayed a hat-box, out of which he took a light blue felt hat which, in spite of its evident decrepitude, was carefully rolled in paper, probably the wrapper in which he may have received it when bartered for in Georgetown. With folded arms he gave directions to his wives as they were packing all these

treasures, together with his hammock, in a large clean plaited basket, he now and again vouchsafing a side-glance, to see what impression these valuables were making upon us. After the ladies had supplied themselves with the necessary cooking utensils, the fishing apparatus, and a large supply of bread, the procession finally made a start. Previous to their departure however, the women had still to contend with their numerous dogs which had long been impatiently watching the preparations for the journey, and now howling with glee, jumped up to follow us: place in the canoe was only allowed for two of the favourite ones.

507. We were soon again paddling vigorously up the Barima until a huge tree on the water-side, from which hundreds of purse-shaped nests of *Cassicus cristatus* Daud. were dependent, attracted my whole attention. After a cursory estimate I counted over three hundred of them. Equally curious as their association during the breeding season, is the fact that on each occasion these birds select a tree upon which, as well as its branches, the nests of *Vespa nidulans* and *Morio* are already to be found: they form a regular offensive and defensive alliance with these insects. None of their numerous enemies, no monkey, no tiger-cat, dare approach either the eggs or the young, so long as both the allied nations live in unison with each other. It was just the breeding season and the most active life reigning in the Republic, though a shot from one of the Indian's canoes nevertheless spread such fright amongst the harmless little people that male and female flew off in wild confusion.

508. The Curiye, a small forest stream on our left, the mouth of which we soon passed, offered a new way of communication which nevertheless can only be used by small canoes between the Maruiwa and Waini.

509. When our negro crew felt their energy on the wane, one of them would start a song, and bring renewed vim and faster stroke to the paddling: it put wings on the corial as the conductor completed the first strophe which he intimated by striking the water with the flat of the paddle in a peculiar manner, and the others repeated in chorus the words that had been sung. The security and ease with which the negroes handled the corial were shewn to a still greater degree by the Indians. Every corial has of course several seats made out of round bars as thick as one's arm, though the Indians nevertheless preferred to occupy the outermost edge of the vessel and knew how to arrange themselves so that the balance was never upset: the anxiety which we continually experienced in their midst, aroused a pitiful smile from them. It is astonishing that their body is by no means hardened against the external influence of temperature and weather, as one would have expected from their whole way of living, for even a light shower will make their whole body shiver. If they are caught in the rain when travelling by water, they first of all try to meet Heaven's disfavour with equanimity, and paddle more energetically, so as to get warm: if the shower declines coming to an end, they pull in the paddles, huddle up together, and let the boat drift quietly with the current. They never think of protecting themselves with their clothes, but are far rather induced by a distant little cloud to take them off and hide them from the rain threatening. This very day however was of such a kind as to put not only their own patience but also ours to a severe test: it caused us finally to steer towards a small inlet which Clementi pointed out as the landing of his

one-time settlement (Warina), where we still ought to find a few Indian houses. The path to them led through a flourishing cassava field the stalks of which reached a height of from 8 to 10 feet and formed a regular arcade.

510. The houses were the most miserable I had hitherto seen and together with their occupants, some 10 in number, were so covered with dirt that we Europeans could not stand the sight of them. A frightful eye-disease, to which they all were subject, offered a picture that struck still further terror. In some, the eyes were entirely suffused with blood, whilst in others the disease had forced the eye-ball out of the socket: the poor neglected children particularly suffered in this way because the mothers, indifferent to their little ones' sufferings, had not even removed the matter surrounding the trickling eye-ball. Clementi assured us that this awful eye-complaint was the sole reason that had driven him and his people from the place. Those who had stayed behind only wanted to remain for such time as the fruits of their labour in the fields could be harvested.*

511. Night proved as unkind as the whole day: the rain continued to fall in torrents and by two o'clock in the morning, Clementi who had slung his hammock close to ours, already started to spin yarns. His listeners did not seem to have completed their sleep, because the exclamations of wonder and surprise ever became weaker and more infrequent until they finally died away altogether. This could not however stem the tide of the chieftain's flow of speech: the ardour of his portrayal was rather the more increased to such a pitch that he raised himself in his hammock and carried on his story with the most lively gesticulations. It finally became unbearable but, on Mr. King angrily calling out that if he could not hold his tongue he would have to sling his hammock in one of the farther houses, we managed to get some momentary rest. The highly imaginative story-teller yielded with a grunt, but hardly did he believe that we had slumbered again than, in a softer and more subdued voice, he resumed the thread of his narrative: this however carried him away once more and made him forget our previous notice so completely that in a few minutes' time his speech was pouring forth with such inspiring zeal and rousing him to such intense excitement that we were forced to burst into loud laughter.

512. A longer stay amongst the dirty occupants of these houses seemed to us more burdensome than to continue our journey in the rain. On the left bank, still in the fore-noon, we passed the Amissi mouth which was considerably wider than the Barima itself. As the Indians said, the Amissi runs only a short course and is in communication with the Kaituma by means of several natural channels (Itabbos): its basin is generally swampy and unoccupied, and its current extremely weak.

513. The water had already for a long time past lost its saline taste, though tidal influences were still unmistakable, and all attempts at cultivation of the water-shed up to this point would prove fruitless, as was also indicated by several abandoned Warrau settlements, of which some had been erected on platforms built immediately above water-level. Dense

---

*See Note on Sec. 325 (F.G.R.)

masses of *Cecropia peltata* showed in the far distance the site of such a settlement.

514. Since we left Warina, the course of the Barima had turned more towards the South-West, and with the increasing alteration in the height of its banks the hitherto characteristic vegetation had also taken on a corresponding change. The palms disappeared and only here and there a thick clump of the spiny *Bactris acanthocarpa* Mart. the deep-red ripe fruits of which shone forth in a dazzling play of colour out of the fresh verdure, covered a spot here and there on the river-sides. Among the new forms of creepers putting in an appearance several *Aristolochiae*, *Passiflorae*, and *Echites grandiflora* Willd. especially attracted my attention. The large dark-red floral tufts resembling the Oleander, which hung down on thin pedicles from the slender runners, were the sport of the light morning breeze, while the *Echites macrophylla* and *E. lucida* Humb., not indeed so rich in flowers, yet glittering with their beautiful yellow tints, as well as the snow-white peculiarly constructed blossoms of *Calyptrion Aubletii* Ging., the little scarlet-red brushes of *Combretum laxum* Aubl. and the delicately shaded grape-like flowers of *Hirtella racemosa* Lam., embellished the handsome riverside screens with the most glorious exchange of colour.

515. After passing shortly before midday the mouths of the Aruta and Pegua on its left bank, the bed of the Barima gradually narrowed down to 40 yards, and so increased its current in equal proportion. Through this narrow channel the stream wound itself in innumerable bends and hindered our progress to such an extent that we could only make very slow headway. The banks ever became higher, the vegetation ever more luxuriant until it reached its climax in the *Mora excelsa* Benth., the "Oak of the Tropics" one might almost say. I really know of no representatives in our northern forests even approaching this tree. Our most colossal oaks would only stand like dwarfs by the side of such a giant, the huge trunk of which is shaded with a dome of the most beautiful dark-green foliage. The Indians call it the "Chieftain of the Forest" and it is the most characteristic name that they could have chosen for it. The stately tree had often deceived us when, on coming round a river-bend, we thought we were gazing upon a series of verdant hills in the distant background, only to find that they changed at close quarters into isolated groups of mora trees with a height of from 150 to 160 feet. Bush-ropes, of the same girth as a man, wind their immense arms around these huge trunks and boughs up to the very top, where their floral chaplet decorates, as it were, the head of the conqueror of the virgin forest: they then fall once more from these dizzy heights onto their humbler brethren the branches of which they likewise enfold, and thus they chain tree to tree and hold in their embrace those giants, the hitherto safe foundations of which the raging current has perhaps undermined, and so secure them against sudden overthrow. On several occasions the high river-banks, undermined by the rush of waters, presented this riotous scenery of a landscape where these giants of the primitive forest, only held back by the bush-ropes clinging round them and the more distant trees, thus bent over the surface of the river into which it was every minute to be feared they were about to take their annihilating

plunge. When the combined chains of bush-rope together with their shackled trees are too weak to bear the weight of a Mora, the sinking monster often drags down with it to destruction a whole series of its supports but just as frequently, if its roots are not quite separated from the soil, new trunks will soon rise from out of its grave and overtop the brushwood of the environs.

516. This concatenation of the bush-ropes affords the trees real protection: one can throw down the larger only after the fall of the smaller ones. I found this out for myself during subsequent travels when, in order to fell one tree that was flowering I had first of all to cut away five or six others which the coil of vine-rope (bush-rope of the Colonists) had linked together.

517. The importance of the Mora for the British Navy to which my brother already drew attention after his first journey, has recently been completely confirmed. One finds this valuable tree in such quantity and huge size on the upper Barima that its banks would supply sufficient material for the whole of England's Fleet.

518. With the appearance of this giant the river-side growth had assumed quite a new character. I was surrounded with trees, flowers and fruits that I had nowhere as yet come across. Amongst those appearing for the first time there especially gleamed the beautiful crimson blossoms of the *Brownea racemosa* Jacq. which at a distance I mistook for the ripe fruits of *Bactris acanthocarpa*. By the side of this refreshingly vivid wealth of nature all the illustrations that the artist has made of these flowers are dead and impressionless—and how could even the most skilful brush attain the exactness that Nature has imprinted on this enamel-work of dazzling colours? The delicate structure of this elegant tree, the brilliancy of its vigorous foliage, the wealth of its large indescribably frail blossoms that glow in such blinding colours that the eye can hardly bear their sparkling fire—everything combined to captivate my admiration. Although the *Brownea* belongs to quite a different family, and its inflorescence differs entirely from the rose, I can find no more suitable term for it than the "Rose of the Tropics." And when the blossoms disappeared the large but delicate seed-pods presented a pretty picture which even beside the magnificent *Gustavia fastuosa* Willd. and innumerable dazzling-white wax-like flowers of the *Clusia* retained an overpowering charm.

519. Nature, with a real covetousness of space, had fashioned the branches that were encroaching outwards far above the surface of the stream into hanging gardens, where grew innumerable Orchids, Tillandsias, Ferns, and Aroids from which giddy heights the last-mentioned dangled in the air their thread-like roots, often 100 feet long. The glorious Vanilla that I had already found scattered on the lower reaches of the river, proved very plentiful here and particularly during the morning and evening hours filled the atmosphere with the delicious aroma of its blossoms. Spreading out on either side its large symmetrical succulent leaves this creeper climbs the trees in a perfectly straight line, twines itself from branch to branch, and then turns down again to ground where it strikes

its roots anew. In spite of the monkeys having already obtained the chief portion of the harvest, the vanilla pod being their favourite titbit, Mr. King managed to collect a considerable quantity. The pods have yet to undergo quite a peculiar form of treatment before acquiring their glorious perfume.

520. After following the crooked course of the Barima for some time in between this fairy-like growth of giant trees, the proud summits of which reach a height unknown in European forests, Clementi drew our attention to a piece of land on which the *Cecropia peltata* was growing in profusion, with the remark, "the last dwelling of the white man." From what he told us we concluded that at the beginning of this century a settler, a Dutchman it appeared, had pushed his way as far as the mouth of the little stream Huena, where he had started a sugar plantation and combined a timber business with it: the solitude of the virgin forest, that rendered all business relations difficult, and a smaller profit than he had expected, seemed to have induced him to abandon it shortly afterwards.

521. The configuration of the ground that had been so uniform and level hitherto, now began to show an occasional rise that was abundantly covered with forest trees until, close to the mouth of the Caruwava or Caruawa, on the right bank, some huts on one of these hills induced us to enter the stream, and pay the settlement a visit. It required but a glance to survey the miserable houses and the equally scanty household requisites. The first living being that we met was a young Warrau woman nursing her baby at one breast, and a young marsupial (*Didelphis*) at the other. A strange family picture for the eye of a European!

522. A numerous gathering of men thickly painted with Rucu and embellished with the most variegated feather ornaments indicated the celebration of a feast. We drew near the drinking hall and soon recognised further signs of the carouse in the huge trough filled with paiwari, and the continual passing of the calabashes. Several young girls, who played the part of Ganymedes, attracted our attention not only on account of their neat clean print costume, but also their regular build of body and features: the women of the Warraus whom we had hitherto seen had never offered us an equally pleasant sight.

523. When the chief noticed us, he and the other male participants jumped out of their hammocks. The former reached under the framework of the roof and brought out from there his staff of office which had been carefully rolled up in palm-leaves and, with it in his hand, formally bade us welcome. Clementi, probably never even dreaming of such a gathering, had stayed behind in the corial with the remaining Indians but, our long stay arousing his attention, followed us after a while. Hardly had he noticed us in the centre of the festive circle than he quickly hurried back to the corial and made his toilette: dressed up with a white shirt, the light blue hat in its white paper cover on his head, and the staff of sovereignty in his hand, he stepped into our circle and stiffly greeted the neighbourly chief who, returning the salutation with equal dignity, bade him welcome to his district.

524. As I have already frequently mentioned, the Indians are passionately fond of play and amusement: hitherto we had only become

acquainted with their endless stories and unruly dances, but now we were to be witness of a new kind of sport. We had often previously heard a good deal about their wrestling-matches but had never had an opportunity of watching one at close quarters. When therefore we learned that a game of this nature was going to be played, we waited for it with strained curiosity, but were almost doomed to disappointment owing to the Warraus not being accustomed to perform it before nightfall when all the invited guests are assembled. Spirits were therefore necessary to make them alter their usual practice, it being impossible for us to stay on until late because we wanted to reach this very same day a Waika settlement on the Manari. What we could not get done by asking, what would have been refused us for the most valuable presents, was obtained with a few glasses of rum, the charm of which the Indians could not resist, although the Paiwari was yet present in quantity more than enough.

525. The play-ground consisted of an extensive circle, situate in the forest on the farther side of the village and had been carefully cleared of all bush and grass. The gathering divided into four parties who with challenging gestures betook themselves to the place of combat where two divisions were opposed against two. On a given signal, the individual fighting commenced with the Ha-ha, a sort of shield, with which the combatants mutually tried to force one another from off a fixed spot within the circle that was held by the victor until he had to yield to the greater dexterity or strength of a fresh fighter from the opposite side. The two individuals of the opposed main divisions who kept their ground within the wrestling place to the last were led amidst shouts of rejoicing and triumph as conquerors to the paiwari trough where the girls met them with calabashes already filled. Simple as the game was, it could not be denied that it must contribute a good deal to the improvement of the adroitness of the limbs and strengthening of the muscular powers, and we Europeans followed with the closest attention and liveliest interest the snake-like turnings and the extraordinary rapidity with which the combatants utilised every favourable situation, every advantage that offered, to attain their object.

526. Amongst the older women who were present at the sports, I noticed several with quite a peculiar apron-belt (Masikara) the material of which that I first regarded as leather, subsequently proved to be a flexible tree-bark. The apron, about a hand's stretch wide, was bent along its upper border over a string that was tied round the body above the hips: towards the other end its breadth was reduced more and more until the whole thing ran out into a thumb-thick extremity which was drawn up between the thighs and fixed again to the string at the back.

527. The festival appeared to be of importance, for there was not only a superabundance of paiwari, but also a considerable supply of a rarer drink, the Ite, manufactured by the Indians from the juice of the *Mauritia flexuosa* and which is so sweet that it certainly contained 50 to 60 per cent. of sugar material. Unfortunately a large number of the most beautiful palms have to be sacrificed in its preparation since the tree has to be felled and the sap driven out by fire placed beneath. The fully supplied troughs and vessels seemed to possess the same attrac-

tive power over our boathands that the flesh-pots of Egypt exercised over the Israelites, for it was only through the most stringent orders of Caberalli and Clementi that they could be made to leave and take the places assigned them in the boats where, with bad but restrained tempers, they took to their paddles. They brought the corials up the Curawava as far as the mouth of the Manari, a tributary of the latter with a considerable current, which we then intended following as far as the Waika settlement, whence we were to start on our overland journey. About 200 Warraus inhabit the basin of the Caruwava: that of the Manari in its lower course is also occupied solely by this tribe.

528. The banks of both rivers again became completely flat, and with them there also disappeared the luxuriant growth of vegetation and pretty landscapes. The trees on the river-sides were overgrown with moss and *Jungermannia*, and only the numerous rank-growing orchids like *Stanhopea grandiflora* Lindl., *Rodriguezia secunda* Humb. and *R. stricta* Steud., *Gongora maculata* Lindl., *G. nigrita* Lindl., and a number of *Maxillaria*, *Epidendrum* etc. enlivened the monotonously desolate aspect of our surroundings.

529. An extensive water-flat soon indicated that the low banks had been no longer able to control the volume of water. As Caberalli wanted to visit in the neighbourhood the settlement of a Warrau whom he had made friends with, I accompanied him in his corial through the heart of the forest up to the first house. I had already learnt to know several degrees of dirt and neglect amongst the Warraus, and yet it must be admitted that I had never found the wretched condition of these Indians so oppressive and pitiable as I did here. Everything—residents, houses, domestic implements, why, even the surroundings themselves—demonstrated only too strikingly that here around us were gathered people who knew nothing or required anything higher than the gratification of their lowest wants. The whole settlement was entirely surrounded by water, and the miserable 7 to 8 feet long houses rose from a platform which, with previously-split trunks of *Euterpe oleracea* placed one on top of the other, had been built on 5 to 6 feet high posts or cut-off tree trunks. A heap of earth in the middle of each house was the substitute for a hearth, and prevented the continually burning fire from finding its way through the lath floor. The low roof was covered with palm-leaves while a tree-trunk, supplied with notches, leaning obliquely against the house, served as a ladder to which at high water the corial was tied. Even at low tide the place was so swampy that a narrow dam made of logs placed on end (*Knüppeldamm*) had to be laid from the settlement to the higher-lying ground. If now upon this limited space one can imagine a fair number of children tumbling about like goblins in the ashes and heaped-up dirt, and likewise men as well as women stiffened with similar filth, even Caberalli's shake of the head and contemptuous smile will become intelligible. Great heaps of emptied shells of a large snail (*Ampullaria urceus* Fers.) which I saw here for the first time led us to believe that the animal must be a favourite with the residents. Being skilled fishermen they generally have sufficient food, and if the cassava root does not suffice for their requirements for bread, they mix its flour with the mealy substance of Greenheart seeds (*Nectandra Rodiei* Schomb.) and the pith of *Mauritia* stems.

530. We left after a short stay and soon caught up with the boats that had hurried on ahead: it was about evening when dead tired we reached the Waika or Akawai settlement Manari, which was also situate on a rise on the bank. It consisted of six large houses, the exact counter-part of those miserable shanties we had seen in the afternoon, for not only on account of the delightful method of their construction, but also the neatness and noticeable tidiness natural to them, they compared most favourably with the whole of the Warrau buildings, Clementi's residence excepted. Though the impression made upon us by their homes was one of the pleasantest, the pleasure was still further increased by the general appearance of the occupants. The cleanliness of their persons, their children, and the nattiness of all their domestic arrangements exercised a most salutary effect upon us, after more than a month's stay among the dirty Warraus, and yet we had caught the women busily engaged in the clean business of baking and chewing bread, infallible signs that we were shortly to be witnesses of a Paiwari. All the men, except the chieftain, had gone to hunt the game required for the feast. The latter, already aged, received us extremely cordially and at once arranged to accommodate us in the largest and nicest of the houses.

531. These people are infinitively more closely allied to us than those creatures whom I visited with Caberalli in the afternoon. Except for the apron-belt which had a much greater breadth and length than that of the Warraus, reaching pretty well down to the knees, and was plaited out of blue and white beads without however containing any winding patterns (*gewundenen Figuren*), the well set-up female figures went about naked. And yet there was spread among them, especially the younger ones, as was to be noticed so often subsequently, a naive modesty which, as regards pure womanliness, undoubtedly stands on an infinitively higher level than the unnatural prudery of an exaggerated and veneered civilisation. We came across girls here with really perfect figures, amongst whom the two Lilies of the Valley, twin daughters of the chief, undeniably carried off the prize for beauty. Had the complexion of these truly plastic beauties been less brown, and their number three, we could have been pardoned for mistaking them for the Graces, who, wandering over the Earth, had lost their way, and with tender diffidence, were now coming towards us from out of the chieftain's natty house. Yet even with this brown complexion, and the number two, we were none the less surprised, for it was impossible for any of us Europeans to have hitherto seen a more perfect symmetry of limb, and such a clear-cut Greek profile which received still further charm from the long black tresses that fell over the beautiful brown shoulders like a natural veil. On my departure from the home-land I had received several little ornaments from a friend for the prettiest Indian girl I was to meet: the Lilies of the Valley are probably still wearing the string-beads and bracelets.

532. It was only the occupation at which they were just then engaged, that did not support our flight of fancy—the cheeks filled with cassava-bread, the chewing of the contents while going about their other business and their haste from time to time to the huge trough to rid themselves of the masticated brew and there take up a new supply, were

but too much suited to upset our little dreams, and made us watch these glorious figures in the mirror of reality.

533. Notwithstanding that my brother and Mr. King had fairly prepared my stomach already by describing the manufacture of this drink, and although I had tasted it frequently, even if reluctantly, a cold shiver ran down my back when I now saw it actually being prepared, and overwhelmed by the experience, had to put to my lips the awful mixture that was immediately to be handed us by the Lilies of the Valley, for even if they alone had prepared all the ingredients it would still have made me shudder to my very vitals. The Guiana Indian however knows no pipe of peace, but a drink of peace, to refuse which means wantonly to change the proffered sentiments of faithful friendship into ones of the most bitter hatred.

534. We had hardly taken possession of our quarters than we began to open our boxes and unpack their contents, to satisfy ourselves as to how far they might have been affected by the rain that had fallen continuously ever since Cumaka up to now, and to save from complete ruin by heat what there still was to save. Only those who have undergone similar experiences can appreciate all the pain and discouragement that a person must suffer when on opening his cases in the firm conviction that no damp could get inside and that his foresight and care must receive their rich reward in the proper preservation of the treasures gathered—he now finds nothing but mildew and mould! Alas, I had to drink my cup of bitterness to its very dregs, particularly with my botanical and entomological collections, and it was long before I could recover from the shock consequent on what I found. Even our "trade" had succumbed to the harmful atmospheric influences, and that we ourselves were also subject to them, was shown by the following morning when more than half our boathands, down with fever, remained in their hammocks. The original plan for the trip had to be altered. The pitiable condition of Mr. Hancock's as well as my own feet, put any lengthy strenuous overland journey which it had been proposed to start here, quite out of the question. At the same time, those of the crews who were afflicted with fever had become an equally embarrassing company whom my brother dared not engage for a trip where the expedition, there was every probability to believe, would be opposed to difficulties and hardships quite foreign to those it had hitherto experienced. The result was the sifting of the sick from the strong, hard though it was to agree. Mr. King, Hancock, and myself as well as the sick crew were to return in the one corial to the mouth of the Essequibo, journey up it to Bartika-Grove, and wait for my brother who, after visiting the Cuyuni, would come down the river and join us there.

535. Next day a general shouting notified that the men who had been sent hunting had returned from the forest, and it was in real astonishment that I stared at their powerful symmetrical figures laden with plenty of spoil and accompanied by the loveliest of dogs.

536. Of all the coastal people the Waikas or Akawais constitute without doubt the most powerful stamp of men and surpass the remaining tribes not only in the vigour of their whole build of body but also in their nobility and regularity of features. They are in the majority of cases slim, generally over 5ft. 6ins. tall, and their limbs firm and

compact: with it they develop in all their movements an elasticity, a suppleness, and an agility of body that up till now had not been apparent amongst the Indians. The size and proportion, the whole construction of the limbs, the longer neck, the less protruding abdomen, and the regular facial features, mostly wanting in the South American Indian, are here united in such a high state of perfection that almost every one might serve as a model of absolute male beauty, particularly if the whole deficiency of the growth of beard were to be remedied.

537. They were just as much surprised at seeing us strangers as we were astonished at their physique: they received us as friends and gave immediate practical proof of the correspondence between the outer signs and inner truth by setting before us as a present a portion of the booty which they had already heaped in front of the chief. As the hunters had been away for several days, the greater portion of the game had had to be smoked, a procedure that gave a particularly horrible appearance to the dead monkeys because they had not been skinned, but only singed: it was long before I could dispel from my mind the idea that these were negro children that had died in convulsions. The remaining quarry consisted of hog, which had mostly been cut up in quarters, deer (*Capreolus simplicicornis* and *C. rufus*), agutis (*Dasyprocta*), ant-bears and a number of fowl, especially ducks.

538. Of the game that was offered us we prudently picked out only the fowl, and our share of the slaughtered hog and deer: our stomach still stood far too much under the sway of the imagination to allow of its wanting to make friends with the ghastly shapes of the huge crumpled-up howler-monkeys, although its revolt had to be completely quelled on subsequent journeys.

539. The lovely hunting-dogs had attracted my undivided attention at first sight. While those of the Warraus belong to a small gaunt breed with pointed snout, upright-standing ears and short hair, those of the Waikas on the contrary are distinguished by strong build and beautiful hair, and to all appearance resemble our water-dogs (*Wasserhunden*): we surmised that they were of Spanish descent, a view that was confirmed by the fact that the Waikas often undertake long journeys to barter breeding-dogs from the tribes of Colombia and Brazil. It is a peculiar phenomenon that beneath this hot sky, hydrophobia is quite an unknown disease and is hardly ever to be seen: the terrible complaint does not occur in Georgetown.

540. The environs of Manari offered evidence of extreme fertility: this was especially noticeable in the sugar-cane and maize growing in the provision-fields surrounding the settlement, with which the products of the coast were out of all comparison, because the maize grew cobs to a length of from 10 to 13 inches and many a plantain bunch weighed 100 lbs. The soil consisted generally of a rich loam strongly mixed with humus and sand, that rested upon a thick layer of clay, so that even in the dry season of the year, the vegetation remained assured of sufficient moisture.

541. However much I was delighted with my trips in such surroundings, the miserable condition of my feet forced me to restrict them to the narrowest limits, and even then I continually returned home with

a heavy bundle, to which the family *Melastomaceae*, so numerously met with here, contributed a good deal.†

542. Amongst the fauna in the provision fields, I was particularly struck with small groups of birds which in the whole of their appearance bore considerable resemblance to our magpies, except that they were much smaller. The Indians called them Ibiburu. At first I took them for *Betyllus leverianus*, but discovered on closer observation that they differed from *leverianus* not only in size but also in the design of their plumage: perhaps they are a new species. They are extremely shy: on which account they are especially rare along the coast. The *Pionites momota*, the Hutu-hutu, which shuns the open provision fields as much as the edge of the forests, sounded its melancholy but sharply articulate note already before sunrise from out of the dark shadows of its favourite resting-place, where it is anything but shy: it usually perches on the lowest branches of the trees, and as it sounds its "Hutu-hutu" slowly moves its long tail up and down.

543. I must correct the observation already repeatedly made that the *Pionites* after it becomes full-grown, bites off the barbs from both sides of the quills of the longest tail-feathers an inch from the extremity, the deficiency being due to another cause. The bird, as is known, is very fond of choosing for its nest a small depression on the side of a hill or some other rising ground. During the brooding season, when male and female regularly relieve one another, they veer round on the eggs very frequently whereby the pinnules of both the long tail-feathers projecting beyond the edges of the nest become considerably frayed and crumpled. The Hutu-hutu carefully attending to the pruning of its feathers tries now, on leaving the nest after hatching, to trim its plumage again, and as it does this several times a day, the feathers that the edges of the nest spared, become sacrificed to its love of order. The surest indication of a young bird that has not yet sat on its eggs is the still undamaged plumes of both the long tail-feathers. The *Crex melampyga* and *Tetrao guianensis* fell just as frequently as the *Pionites* to the arrows of the Indians, who can imitate the bird's call of "Durra-quarra" to perfection and so decoy it within certain reach of their weapons. Directly it greets the break of dawn, the Indian imitates it in reply, picks up bow and arrow or gun in the meantime, hurries off, and within a few minutes returns

---

†—The prominent species were: *Miconia* (*Melastoma* Aubl.) *alata* DeC., *M. racemosa* DeC., *M longifolia* DeC., *M. purpurascens* DeC., *M. laevigata* DeC., *M. attenuata* DeC., *M. elata* DeC., *Segraea sessiliflora* DeC., *Henriettea succosa* DeC., *Clidemia agrestis* Don. Distributed among the low bush there grew particularly: *Mrodia longiflora* Sw., *Mabea Pirini* Aubl., *Majeta guianensis*, *Hirtella racemosa* Lam., *Tabernaemontana odorata* Vahl., *Cephaelis involucrata* Willd., *Eugenia* and several species of *Cordia*. Among the legumes I would mention: *Lisyanthus grandiflorus* Aubl., *Convolvolus guianensis* Aubl., *Monnieria trifolia* Linn., *Coutubea spicata* Aubl., *C. minor* Humb., various *Spermacoce*, *Phytolacca*, *Psychotria*, *Xiphidium*, and *Solanum*, while *Ricinus communis* of really giant size covered the fields of the provision grounds, but I have not been able to learn whether the Indians are aware of the properties of its oil: in Georgetown it is known, and the negroes accordingly cultivate the bush in plenty. The virgin forest surrounding the provision fields consisted for the most part of *Ropourea guianensis* Aubl., of the beautiful blooming *Guettarda*, *Isertia coccinea* Vahl., *Cubaea paniculata* Willd., *Vochysia guianensis* Aubl., *Macrolobium sphaerocarpum* Willd., *Myristica sebifera* Sw., *Siphonia elastica* Pers., and *Triplaris americana* Linn.,—all of them trees which had not yet appeared in the lower reaches of the stream.

with the bleeding bird. I have almost always found the bird solitary, rarely in pairs.

544. On the hunters' return from their successful trip the bustle and activities of the settlement increased. Already before sunrise the older women, laden with heavy baskets full of cassava roots and sweet potatoes, were back from the provision fields, while the men brought in huge loads of sugar-cane, the juice of which was to be added to the Paiwari. The whole of the fair sex, old and young, were grouped around the baskets, to peel the roots, to grate, squeeze, and work them up into bread, and to boil the potatoes in huge pots. Not a word was said, for their mouths were chock-full of cassava, all communication and intelligence being conveyed in pantomime. Had not the sad prospect of being inevitably forced to imbibe the disgusting drink scared all gaiety out of me, I would have burst into loud laughter on stepping within the circle of this busy congregation.

545. A second drink that I saw manufactured here out of maize, potatoes, and sugar-cane juice was called Casiri by the Indians. The maize is ground in a mortar-shaped vessel and then boiled to a pap: the same thing is done with the sweet potatoes. This completed, a quantity of cane juice is added to the latter, and then mixed with the maize-brew after it has become thoroughly cooled. So far the most sentimental stomach of a European has no cause for objection to its preparation, were it not that finally a vessel with chewed maize grains which are already fully fermented is emptied in to accelerate the fermentation of the whole: a certain quantity of water then thins the mass and makes it more fluid. The taste of the drink is, for the rest, sweet-sourish and in no sense unpleasant.

546. After the huge trough, which certainly held from 4 to 500 quarts, as well as the larger vessels had been filled with paiwari and casiri, and covered with plantain-leaves, the residents thought about their persons and the preparation of their holiday attire. The women brought out their little cups and pots with oil made from the *Carapa guianensis*, with which, after the morning bath, they salve both their bodies as well as their very beautiful hair, the rich fullness of the latter being ascribed especially to its growth-giving qualities. When the buckeens want to manufacture this wonderful hair-restorer, they collect the chestnut-like fruits and heap them up in a damp spot until they begin to go bad, when they clean them of their outer seed-coverings and crush the kernels to a pap which they knead several times with warm water and then expose to the sun in a large trough-like bark receptacle, where the oily portions of the fruit soon collect on the surface. Macassar oil as well as Dupuytrin's hair-strengthening Lion Pomade for a long time past have had to make room for this oil on the toilet-tables of the beautiful creole women.

547. The boxes made of palm-leaves containing Rucu and Cariacru were also prepared in readiness for the morning when the face and body were painted in motley colours. The former is made from the fruits of *Bixa Orellana* the seeds of which are surrounded with a slimy vermilion-coloured envelope. These are washed and stirred around in a vessel containing water until their slimy coverings become quite loosened and can

be removed, whereupon one exposes the remainder to evaporation in the sun: when the watery contents are quite evaporated, the whole is mixed with crab-oil and the sweet-scented resin of the *Hymenaea Courbaril* Linn. The finer Cariacru with which however the Waikas only paint their faces, is obtained in barter from the tribes of the interior who manufacture it from the leaves of the *Bignonia chica* Humb. The fruit of the *Genipa americana* supplies them with a bluish black colour which lasts a fairly long while.

548. Before I pass on to a description of the festival itself I must mention the way and manner in which the host makes his guests understand on which day they are expected to dine with him, or when somebody with whom he has business to transact must put in an appearance, because the Indian has no special terms for individual days.

549. When the chief wants to give a feast, he picks as many strings as the number of his friends living at a distance whom he proposes inviting, and threads as many beads or ties as many knots upon each of them as there are days remaining in the interval before the appointed date. Swift messengers now hurry off with these strings in all directions to everybody whose attendance is requested, and hand him one at the same time that they give him the verbal message. The person invited then ties it on to his hammock, and every morning takes off a bead or unties a knot, and on the day when the knots are all loosened, or the beads have all disappeared, the guests put in their appearance for sure. But in order that he himself may make no mistake, the host has also retained a string and observes the same procedure followed by his friends, daily removing a bead or undoing a knot. They employ the same method in all their private matters and business affairs that they wish to carry on with tribal associates living at a distance. Amongst the tribes of the interior, particularly among the Macusis, instead of the strings with beads or knots, use is made of a stick into which are cut notches corresponding with the number of intervening days: one of these notches is shaved off every day, and so the feast cannot prove abortive.

550. What a sprightly picture presented itself at dawn to-day! The first glance I cast into the open houses showed that more than half the residents were busy with their toilette. Mothers painted their children, an operation under which the impatient little boys particularly delighted me, because one could see in each one's countenance that it occupied far too much of the time that might be spent in company with those of their own age already tumbling about along the front. Bounding with impatience and quivering in all their limbs, the brief and sharp expostulation and reproof of the mothers could only momentarily keep them quiet. The time of torment at last drew to a conclusion and, reviewed under the discriminating gaze of their proud maternal relatives, one after another of the youngsters hurried off to his companions, till the voice of some criticising mother would call this or that one back again and lengthen some of the painted streaks or cover up others. One pretty little girl however had a far more impatient partner for the feast to quieten: this was her tame monkey which knew far too much than allow the daubs painted by the mother on her brother's face to be copied by the sister on its own, and accordingly tried to prevent it by mischievously biting and violently struggling with her. What wonder then that the abrupt

and noisy utterances with which the mother had reproved the son, were repeated ten times oftener by the daughter who finally brought her difficult task to an end by girding the restless creature with some beaded strings and a small apron-belt. The older girls, standing in front of a looking-glass that had been obtained in barter, were smoothing and salving their luxuriant black hair, while the men, sitting up in their hammocks, and also engaged in tidying theirs, let their wives, who were kneeling in front of them, paint their feet up to the ankles with a bright red colour, so that one could be easily deceived and led to believe that they were wearing red laced boots. Other groups of girls were busily engaged in threading the beads they had received from us to decorate themselves with: some of the dear old grannies, on the other hand, were tripping it from one pot to another, and hurrying to the paiwari trough to taste the brew and cover it more tightly with palm-leaves, while others again were adding to the supply of cassava bread or else cleaning and putting on the fire the meat intended for the guests.

551. The chief, in full regalia, was up and about by earliest sunrise. In a coloured shirt, white trousers, and head covered with a European cap he sat upon a small stool in front of the house and carried on a conversation with Clementi who, sitting at his side, was wearing his dress-coat, the stuck-up collar of which half covered his ears and almost reached up to the blue hat still wrapped in paper. Clementi's wives had also got out their calico clothes to-day.

552. My eyes quickly sought the lovely twin-sisters to admire them in their ball-dress, but they were still engaged in stringing our beads, and altering their bracelets: their abundant dark hair, all smoothed and salved, covered their beautifully formed shoulders. Towards afternoon the whole toilette was completed.

553. The rivers being the usual means of communication in the wilderness, all the guests came by corial and notified their arrival at the landing place with a loud shout of delight whereupon, under the leadership of their chief, they drew near the settlement in regulated order. The signal of arrival given by the first party had attracted my attention, and full of expectation I was looking forward to its appearance. An elderly but still handsome manly figure, clothed in a coloured shirt, his head covered with an old felt hat, and with the staff of sovereignty in his hand, suddenly drew near from the direction of the landing: he was immediately followed by a large number of most handsome male figures. I had already noticed much picturesque finery amongst the Warraus but I had never gazed on a picture similar to what now presented itself. Imagine a handsome vigorous male, with the head encircled in a fantastic feather cap: the face streaked with a number of fine white and red rectangular parallel lines and then the forehead, from around which and where it was stuck, there hung the white feather-fluff of the *Crax alector*: the whole body covered with black and red coloured right-angled patterns as far as the ankles, immediately below which the feet were painted red: the powerful neck and equally muscular chest decorated with chains of monkeys' and hogs' teeth from which tassels, made of pepper-eater skins mixed with those of the beautiful honey-bird (*Nectarinea coerulea*) or

with wing-cases of brilliant diamond-beetles (*Buprestidae*), hung down the back: the ankles encircled by strings threaded with the hollowed-out seeds of the *Thevetia nereifolia* Juss. that cause a tinkling noise with every step—and you have a description of every Indian accompanying the chief. Only a few amongst them were specially noticeable through wearing a feather mantle made of the closely-threaded long tail-feathers of the Indian raven (Powis) which, like a halo radiating downwards, enclosed the shoulders. Leading their children by the hand, dressed in simple bead-ornaments and thickly painted, the women closed the interesting procession.

554. Although our large corial had certainly roused the arriving guests to a high pitch of curiosity, and the sight of so many strangers filling the village must have increased their astonishment still further, the column proceeded earnestly and silently on its way without taking the slightest notice of us. Only the children threw shy and stolen glances in our direction, it being probably the first time in their lives that they had seen white and black people, and, frightened at our appearance, anxiously nestled close up to their mothers. When the procession arrived at the chief's house, the two commanders greeted one another: the visitor sat on a stool already placed there, his dependents standing around in a half-circle.

555. The salutation ceremony of the Akawais is fairly brief. Guest: "I am come." Host: "It is well, art thou come?" Guest: "Yes, I am there." From what Caberalli told me, the salutation and welcome ceremony of the Arawaks exactly corresponds with this, *e.g.* Guest: "I am come." Host: "It is well: art thou come?" or also only "It is well." Host: "Are you there?" Guest: "Yes, I am there."† As the guest uttered the last word, the wife of our chief handed him the drinking vessel filled with paiwari, while another placed a pot of meat before him. After drinking he handed the calabash to the next man on his right, and seized onto the meat, whereupon the host excused himself for not having anything better to set before him, an apology which was accepted with an "It is good." All his remaining male companions were then supplied with paiwari and meat, while the women, who never dare eat at the same time with the men, inquisitively turned their bashful looks upon us: as soon as they had eaten and drunk, they approached this or that resident, spoke with him, or stepped up to us, and only now was it permissible for the women to still their thirst and satisfy their hunger.

556. Troop thus followed upon troop, the reception ceremony being repeated with each one. Amongst the whole of this vast assemblage there were not two individuals where absolute correspondence could be found in the painting of the face.

557. Every guest had brought with him his cotton-woven hammock which, directly after the salutation scene, was fetched out of the corials by the women, slung up in one of the houses, and taken possession of by the owner. Resting in it, he would talk with his comrades lying close by, or make some funny satirical remarks about us, our people, or

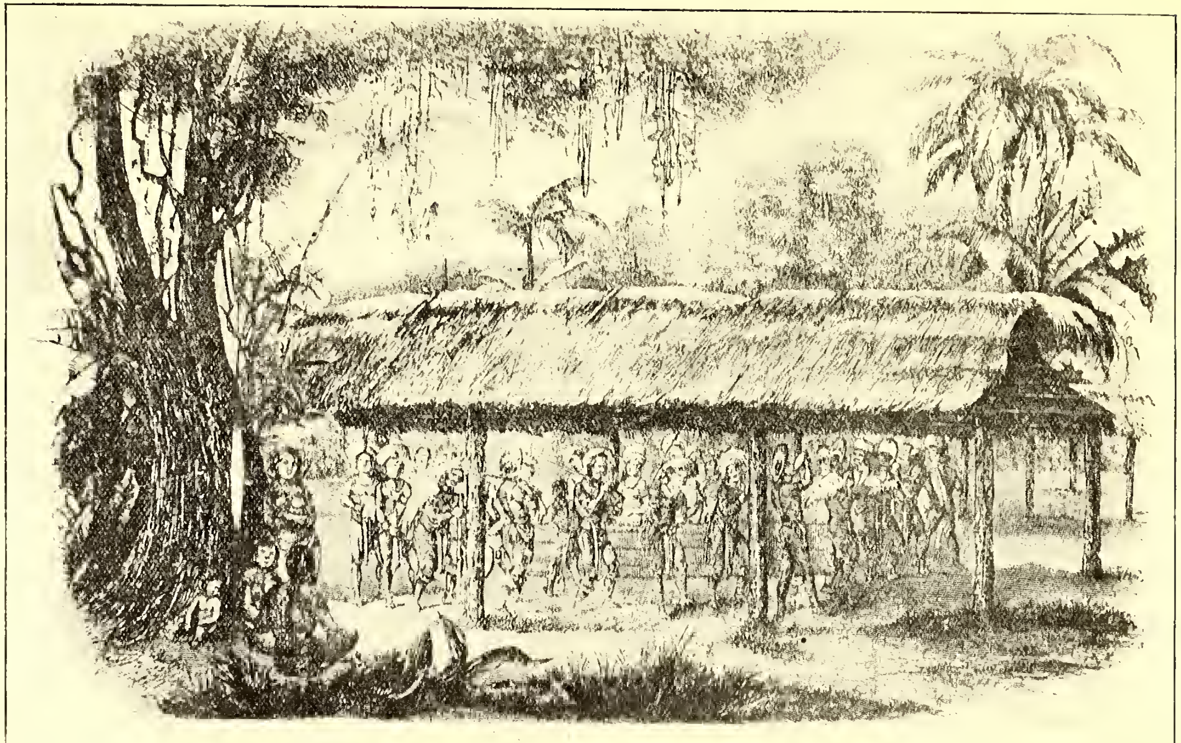
---

† Compare Quandt: *Nachricht von Surinam und seinen Bewohnern.*

our belongings that raised a hearty laugh among the others: the drinking cups that were continually going the round, naturally enlivened the conversation more and more.

558. That the Master of the Ceremonies was to have a gala day of it, was indicated by his wealth of decoration. Shortly before sundown he seized the huge bambu round which long strings threaded with *Thevetia* seeds had been wound, and with it gave the signal to begin the dance, whereupon every jack man jumped out of his hammock and they all arranged themselves in a half circle around and at a little distance away from the huge paiwari-trough. This, together with the house was lighted up by several torches manufactured from thick cotton strands repeatedly dipped in melted wax and rolled. The M.C. now sauntered with a stoop round and round the trough, at the conclusion of each circuit taking two steps towards it, and then again one step back—a movement that was imitated by the whole column, each man having the left hand resting on the right shoulder of his neighbour, and except that, instead of a stoop, their position was upright. This slow and measured circling and posing was regulated by the beat of a monotonous song: I could unfortunately obtain no explanation of the meaning of the words that formed its foundation, because the present-day Waikas no longer understand them themselves. The words of the song are handed down from father to son but the language seems to have changed in the course of time, because the Present has indeed preserved the form, the phrasing of the expressions and the words, but not their meaning. The M.C. every time sang a few words beforehand which the chorus repeated, and this was effected with such precision and accuracy that one thought one heard but a single voice. Among the women, only the chief's wife and an old granny, who was apparently the oldest member of the whole company, took part in the song.

559. After the procession had sauntered round the trough several times, the M.C. stopped short, the dancers drew fresh breath and let out a frightful yell. The women and girls hurried now with the empty calabashes to the trough, filled them full, handed them to the men and satisfied every one whose eye beckoned for refreshment, when the column again set itself in motion, but to the accompaniment of a fresh equally unintelligible song in another beat. During the pauses those who were tired dropped out of the ranks, fresh dancers stepping into their places. Indeed, the more the dancers drank, the oftener were the pauses repeated, the more irregular the movements, and the noisier the song, which finally degenerated into a wild roar. Owing to my little gifts I had unfortunately completely won the favours of both the beautiful twin-sisters who now wanted to show their appreciation by frequently toasting me with the drinking cup. As the refusal of a drink is considered a wilful sign of contempt and would have engendered indelible mistrust and bitter hatred in the hearts of both beautiful girls as well as their father, I found myself forced to make at least an appearance of swallowing the stuff. But what are our notorious drinking-bouts as compared with such a feast of these savages! I saw men emptying at one draught calabashes that certainly contained two to three quarts, hurry off to a



Hutten und Tanz der Waikas

WAIKA HOUSE AND DANCE.

tree where they will squeeze in their stomachs so as to vomit the contents, and directly afterwards accept from the hand of the woman waiting for them the newly-filled calabash, the contents of which they will again guzzle at one pull. In the drinking of Paiwari, the Indian is never satisfied, and here also the dance and song, if one can still apply that name to a dissolute row, continued until the intoxicating liquor was drained to the last drop.

560. Except for its change to "In Paiwari Veritas" the old saw "In Vino Veritas" retains its full worth even in the virgin forests of Guiana. With every cup of drink the inner and truer disposition of the drinker becomes exposed more distinctly and clearly. Grudges and hatreds that have been restrained for years, affronts which the offender would seem long to have forgotten, are now again openly referred to and expressed in reproaches such as "You are the son of the man who slew my father," or "seduced my woman," "It was you that poisoned my wife," "You murdered my son," etc., reminders which every Indian in circumstances of sobriety will check with cunning caution. These reproaches would without doubt immediately lead to the most bloodthirsty revenge were it not that upon the very first sign of drunkenness all weapons are removed to a distance by the sensible women who have been tutored by experience, and by certain of the men whose business it is to keep their heads clear and cool. Besides, the women had long before decoyed many of these disturbers of the peace to their hammocks where they had tightly tied them in.

561. Our Warraus, whose talent for drinking I had already had frequent opportunity for admiring, had utilised the auspicious occasion to such an extent that by the following morning they were lying about in all directions, and, like the Akawais, only awoke from their dissolute condition late in the afternoon. According to all indications the effects of this drink must be much more weakening and deadening than those resulting from spirits. A large quantity of *Ampullaria urceus** which some bustling women had already boiled and prepared by daybreak the following morning, seemed to show pretty plainly that, like herring salad with us, it serves as a pick-me-up for the disturbed nervous system. The mollusc is cooked in its shell, which is then broken and the entrails of the creature removed: sprinkled with vinegar the muscular portions offered quite a delicious dish.

562. While some of the women were employed boiling the snails others started afresh on their masticatory muscles so as to replace as quickly as possible with a new flood the ebb that had set in within the pots, and not let their worshipful masters miss their daily drink.

563. As with the Warraus so with the Akawais, the whole burden of the labour falls upon the shoulders of the women, and I must give them the praiseworthy testimony that during our stay amongst them they never showed themselves idle. They had even to procure the firewood for the hearth and for the fires under our hammocks. The husband who

---

*A detailed monograph of the *Ampullaria urceus* by Dr. Troschel is to be found in *Wiegmann's Archiv für Naturgeschichte* 1845 puts his hand to it possesses either only one wife, or else belongs to that rare race among the natives—that of chivalrous husbands.

564. The weather ever remained the same. Heaven had not hitherto vouchsafed us a single day without the heaviest downpour of rain, unfortunately a grievous temperature for my collection of plants. If I wanted to save at least something I was forced to have recourse to heat, and even then the sappy specimens rotted under pressure. Stöckle and Florenz were accordingly occupied from morning until night drying the papers before the fire, for which the former had built a regular drying apparatus which, of course, on account of the imprudence of the builder, only a few days after completion shot up in flames, together with the greatest portion of the paper: a loss that proved all the more distressing to me, as it could not be replaced.

565. After many a vainless vigil my brother finally succeeded in fixing the situation of Manari astronomically: this was found to be 7° 35′ 34″ lat. N. and 59° 38′ long. W. The meteorological observations hitherto determined gave the following results:—

Record.	Barometer.		Thermometer Fahrenheit.	
	In Inches.	Attached Thermometer Fahrenheit.	Dry Bulb.	Wet Bulb.
Highest.	30.176	89.0	88.4	83.4
Lowest.	30.018	72.2	68.0	68.0
Mean of 37 observations taken hourly.	30.092	78.5	75.0	75.2

566. As my brother also wanted to get to know the Barima immediately above the cataracts, he left in a little corial in company with Mr. Glascott, paddled down the Manari for a bit and in short time, by means of two of the natural junction-channels, the Gaima and Ataima, reached the main stream. The incessant rain had not alone filled the Barima to overflowing, but had also increased the current to such an extent that the party, in spite of every effort, could only make slow headway. The current was running at 4-4½ miles per hour. After passing the mouths of the small streams Ararisi, Sabritin, Burroparu and Mariwaballi, they landed by evening of 28th June at the Warrau village of Simuita, where the stream still had a breadth of 51 yards. On the following morning the barometer recorded 30.020 inches, and the thermometer 70.5 Fahrenheit. Although we had already here and there in the Barima at Manari mouth seen exposed large fine-grained sand-stone rocks which the Indians used for sharpening their knives and axes on, they were nevertheless so isolated as to offer no hindrance to the

passage of boats, and the important cataract Mekorerussa, which the party reached in the afternoon, accordingly constituted the first but at the same time insurmountable stoppage: up to this point the Barima would offer the most suitable highway for steamers. According to the concurring statements of the Indians, my brother and Mr. Glascott were the first white people who had ever penetrated so far, a statement that was confirmed by the fact that the course of the Barima proved to be quite different from what had hitherto been laid down in the maps. This observation determined them to continue their trip so far as the bed of the stream allowed. Fall now followed upon Fall, the largest of which the Indians called Uropocari. Although the river maintained its previous breadth, it nevertheless proved actually full of granite, until quartz, regularly disposed in layers, soon after made its appearance on the surface. During the course of the following day, after passing the mouth of many a moderately large stream in the Barima, particularly the Wanama and Mehokawaina, an insurmountable obstacle presented itself to their further progress in the innumerable trees which, tumbled one over the other, crossed the river in all directions. They accordingly gave up the corial with which Mr. Glascott remained behind, my brother continuing on foot in the company of several Indians. Their progress was rendered difficult by numerous swamps and they had to fight their way slowly through with an axe at every step. On the 1st July, after a long interruption, they struck again on a tributary of the Barima, which even the Indians did not know of, because none of them had ever gone so far Owing to the numerous granite boulders that filled its bed, my brother called it Rocky River. The Barima still showed a breadth of 30 feet here where it coursed out of the W.N.W. and its bed was frequently intersected by granite ridges. The whole vegetation testified to an unusual fertility of soil. The want of victuals which made itself now felt forced them to return, while the continuous rains had made it impossible for them to take any astronomical data. The meteorological observations on the other hand gave the following results:—

Record.	Barometer.		Thermometer Fahrenheit.	
	In Inches.	Attached Thermometer Fahrenheit.	Dry Bulb.	Wet Bulb.
Highest.	30.088	80.5	80.0	78.5
Lowest.	29.942	71.4	71.0	70.0
Mean of 37 observations taken hourly.	30.007	75.56	75.30	74.2

The return journey down the Barima, hastened by the strong current, was accomplished in two and a half days, whereas the voyage up had lasted six.

CHAPTER V.

Splitting up of the Expedition—Return to the lower reaches of the Essequibo—Network of natural canals—River Whomana—Waini—Obstinacy of the Negroes—Barimani—Beara—Asacota Settlement—Manners and customs of the Arawaks—Court day—Flora of the Barabara—River Morocco—Morocco Mission—Missionary Cullen—Colonies of Ants—Mudbanks of the Coast—Mouth of the Pomeroon—A District of abandoned estates—Hospital for lepers—Mr. Brett's Mission—Tapacuma Lake—Wandering Ants.

567. The visible diminution of our provisions forced us to think sooner about our departure than we had intended. The separation of the healthy from the sick accordingly took place. The latter included Mr. King, Hancock, myself, Stöckle, little Florenz, twelve of the boathands, Caberalli, and, to the great joy of those remaining behind, Clementi, because these now dared hope to be able to sleep of a morning: all attempts at breaking the chatterbox of the habit of commencing his everlasting yarns at two o'clock in the morning, for which habit his nickname "The Cock" had been given, had hitherto proved in vain. Maicerwari and the two witnesses had also to accompany Mr. King.

568. As we could not trust our corial on the waves and wild weather of the sea we determined to make the return journey by a safer route. As I have previously remarked, the Barima immediately below the mouth of the Warina, is in communication with the Waini, by way of the small streams Waburina, Sabaina, Iterite, and Morebo, as well as by several natural itabbos: other itabbos junction up the Waini with the Morocco which empties itself into the sea close to the mouth of the Pomeroon. When one enters the Pomeroon a similar network of itabbos carries the traveller into the Essequibo. This route was apparently the most suitable and was chosen by us for more reasons than one. My brother furthermore commissioned me to travel up the Essequibo as far as Bartika Grove, and from there send him a corial with provisions to the Cuyuni, since our small stock made us afraid that his party might run short of food. On the evening before taking our departure the Manari villagers again gave our Indian boathands a small drink party, at which the Warraus were so overcome that force had to be used to get them out of their hammocks in the morning. My captain (steersman) was nowhere to be found, and only after a long search did one of the women find him lying senseless in the grass. As all attempts to make him stand up failed, I had to have him carried to the corial, where he continued in his comatose condition until evening, and on awakening was not a little astonished to find himself once more in his boat in the middle of the stream.

569. We were carried with tearing rapidity down towards the Barima, which soon enclosed us within the giant growth of vegetation along its banks. In spite of the current speeding almost as fast as an arrow, not a living thing in the dark foliage escaped the keen sight of

the Indians: they even spied out a snake lying coiled up upon one of the branches, which I only discovered after a hard try. A shot from my gun brought it down from its height fast enough, but not as fast into the corial, for none of my people would agree to drag it into the boat, although it was quite a harmless *Herpetodryas lineatus* Schleg. I accordingly had to do the job myself, but when I stuck the spoil in the cask filled with spirits, their compassionate laughter never wanted to cease. A small flotilla of corials that we met during the afternoon spread unusual liveliness over the stream. It was Warraus who had come here to catch Morocotu or Osibu (*Myletes*) a very tasty fish that is invariably caught in great numbers on its way up to spawn at the Falls of the Barima where it regularly betakes itself during the rainy season. For a bait that the fish can hardly withstand the Indians use the crushed-up seeds of *Carapa guianensis* which they pack into lumps wound round with thin bush-rope and, tied to a string, throw into the water. Numbers of fish soon collect round these packages, and now is the time for the sharp-sighted spear-thrower to pick out the best amongst them for his never-erring aim. The Warraus, as well as ourselves, bartered a large quantity of the catch they had won, an acquisition on which we congratulated ourselves all the more in the evening when, on arrival at Clementi's place, we found the occupants left behind completely out of provisions. Though our needs were checked for the time with the fish our anxieties were nevertheless further increased by the prospect presented in the course of the following day, when Caberalli assured us that his place would be the first settlement we should touch at.

570. Mr. King and I already anticipated the cursing and swearing in which the Negroes would indulge when they found their usual travelling rations diminishing, perhaps at last altogether disappearing, and accordingly prepared ourselves for many a hard struggle that without doubt we would have to share. With prospects thus clouded, we said good-bye next morning to the oft-times cursed chatterbox Clementi, bought up the whole of the provisions available, and resumed our journey in the hope that our supplies would perhaps be replenished by fish or game. During the course of the afternoon when my corial was somewhat behind, I noticed the paddlers in front suddenly point to a spot on the riverside and, gesticulating wildly, pull out into the middle of the stream as fast as they could. Impelled by curiosity, I ordered my men to pull harder, and soon learning the cause of the commotion through a cry of "Snake," had all my work cut out to prevent them making off at top speed. The huge brute lay coiled like an anchor-rope upon a thick branch of a tree projecting over the water where it was sunning itself. I had already seen many a large *Boa murina* (*Eunectes murinus* Wagl.), the Comudi of the Colonists, but never yet a specimen of such size. I struggled long within myself, being undecided whether I should take it or pass by and leave it. All the awful pictures that had been painted for my benefit concerning the mighty strength of these snakes, and that had made me tremble as a boy, were now called to mind, and the representations of the Indians that if not mortally wounded at the first shot, this reptile would without doubt seize and easily upset the corial in its

coils, as had often proved to be the case, coupled with the visible terror of Stöckle who charged me in the name of his forefathers as well as my own not to expose ourselves heedlessly to such dangers, decided me upon giving up the attack and proceeding on my way in peace. But hardly had we passed the spot than, ashamed of my want of resolution, I ordered the paddlers to turn back. I loaded both barrels with the coarsest shot and some slugs, an example that was followed by the most courageous one of my Indians. We slowly made our way back to the tree where the snake was still lying in the same place. On a given signal, both of us let fly: luckily hit, the colossal creature fell headlong and after a few convulsive movements, was carried down with the current. Full of glee we paddled hard after it and soon reaching it, dragged it into the boat. Although everybody was convinced that it was quite dead, Stöckle and Florenz did not consider themselves at all too safe in its vicinity: screaming and whining, both heroes flung themselves on the bottom when they saw the creature, 15¼ ft. long and 2¼ft. girth, lying in front of them, and now and again moving its tail. The ease with which we had overcome it was due to the effect of the slugs of which one had smashed the backbone and the other the head. A wound like this, especially in the head, as I subsequently often had opportunity of observing, costs the biggest snake immediate loss of action and movement. The shouting as well as the shooting had brought back the boats hurrying ahead: they never for a moment imagined that we were going to attack the animal and Mr. King, completely confirming the statements of the Indians, reproached me on my undertaking. Upon one of his recent journeys a similar monster, 18 feet long, was only killed at the seventh ball.

571. As the space in the corial was too limited, I buoyed myself up with the hope that we should be soon finding a night's shelter where I could skin it. We left the Barima at the mouth of the small stream Whomana or Maruiwa, into which we turned.

572. The stream was fairly broad for a considerable distance, so that we could quickly follow its course. The farther we advanced however, the narrower it became, and the oftener had axes and hatchets to be used to cut a passage-way for the two large boats in between the trees that were tumbled one over the other. The banks of the Whomana proved to be very low and completely flooded on both sides: it was evident that we had consequently once more reached the area where reigned the *Manicaria, Euterpe, Bactris, Maximiliana*, and *Oenocarpus*. Bushy *Mimosae* and species of *Ficus* hemmed in the riversides with their moss-covered trunks and branches while the taller foliage-trees of opposite banks actually joined hands to form a gloomy leafy canopy over the stream, the sombre silence of which was occasionally broken by the fluttering of a solitary bird, *Pipra auricapilla* Licht. or *P. leucocilla* Linn. The creek narrowed at last to such an extent that we had to battle with the axe for every 5ft. broad streak of water: the navigable channel sufficed all right for the small vessels of the Indians, but not for our 40ft. long and 5ft. broad corials. Though previously we had not even heard the dull hammering of the woodpeckers or the shrieking of the parrots

hastening to their haven of rest, the forest now re-echoed in all directions with the never-resting blows of the axes, the shouting of our boathands, and the laughter of the Indians accompanying us. A large number of boa constrictors seemed to have chosen the banks of the stream for their childbed, for a large number of their five to six foot long and correspondingly thick young brood were encamped upon the trees bending over the creek, so that on striking the axe into the trunk of such an one, and making it shake, several would fall into the corial and terrify the Negroes so much as to make them jump yelling into the water. This dread gave the Indians plenty of sport, and as often as they noticed a snake upon an overhanging tree, they also struck the branches with their paddles and drove the frightened creatures down into the midst of the shivering Blacks.

573. The sun had long sunk below the horizon, and yet we searched in vain for a dry spot where we could sling our hammocks and camp the night. We had already made up our minds for the inevitable, and to spend the night in the narrow confines of the corial, when one of the Indians told me that a fire must be burning close ahead somewhere as he could smell the smoke. All the other Indians strained their olfactory nerves to corroborate the happy tidings, by similar observation, but in vain—the first man who reported a fire in the neighbourhood stood alone in his convictions. Discouraged over the disappointment we continued our journey, when suddenly a general cry of joy afforded the ridiculed Indian absolute confirmation of his sharp sense of smell, for at some distance ahead blue columns of smoke between the dark-green palm-fronds indicated the presence of Man. On nearing the spot, we distinctly recognised three people, and in them our old acquaintance, chief Marawari of Honobo with two of his wives who were then on their way to Georgetown. The fire nevertheless was not burning on dry ground but flamed up from an old tree-trunk, while the three hammocks were slung up over the water surface on to trees standing close to one another, an expedient to which we also had to have recourse, whereby the Indians had to carry us on their shoulders to our roosts. Our night's lodging swaying over the water made it impossible for me to skin the Boa that day and by next morning the specimen had gone completely putrid, an occurrence that I all the more deplored because I never met an example of equal size again. When on the following morning we woke shivering with cold and our teeth chattering, we found our hammocks and clothes quite wet from the damp.

574. In company with Marawari who knew the complicated course of the channel well enough, we continued our journey and passed the Waburina and the Iterite. The outward hindrances to our progress were indeed slighter than the day before, but in their stead the strike amongst the obstinate Negroes that we had been afraid of in Warina, now came to a head. Marawari was just as short of provisions as we were and had already shared his supplies with us the evening before. With the flooding over of the banks not only had the game drawn back to the heights in the interior, but the fish now revelling on the many fruits, etc., to be found in between the forest trees, took no notice of the baits cast to them. Even the small *Pipra* which still showed up here and there as

late as yesterday, had disappeared to-day. The essential difference separating the Indian character from that of the Negro had never presented itself so vividly before me as it did on this occasion. Our Indians bore the pangs of hunger in silence with stoic steadfastness and tried, by quickening their paddle-stroke, to put an end to the trouble as quickly as they could. The majority of the Negroes and coloured people on the other hand, what with cursing and swearing, had downed paddles about midday, and all our warnings and entreaties to take them up again were met with sneers like:—"Give us something to eat first: a hungry stomach can't work," or "We don't want to work for a man from whom we get nothing to eat"—in short, the paddles remained idle, and if we only wanted to get along at all it was necessary to distribute our steady faithful Indians and the few better-minded Blacks proportionately in and among the boats. By evening we indeed found a dry spot for our night's lodging, but could only rejoice a little over this bit of luck because our rebellious company sang a dissolute lullaby and actually seemed intent upon banishing sleep from us altogether by abusive language and the most senseless noise. Mr. King stood this nonsense for a long while without saying a word, as he attributed their impudence to the score of hunger: but as it ever became more evident that their troublesome behaviour arose solely from ingrained evil disposition, he lost patience and swore solemnly that he would leave behind at the next Indian settlement everybody who refused to put up patiently with what could not be helped—and then each could fish for himself as to how best to find his way back to Georgetown. As it was, Mr. King could not legally drop any disturber of the peace elsewhere than at some inhabited place. The effect of the threat was surprising, for their fast and blaspheming mouths were suddenly silenced as if by magic. Only two obstinate fellows would not be intimidated, but continued to threaten and to curse as before.

575. Still further pressed by hunger we resumed our journey in the morning, when, to the great joy of the boat-hands, we reached before noon the beautiful broad Waini by way of the Sabaina and Morebo. We were even more delighted on unexpectedly noticing in the distance two small vessels paddling along. Pulling now in double quick time, we had got tolerably close when the Indians, who happened to be in them, seemed to become suspicious of our feverish and impetuous haste, and to fear hostilities. They accordingly tried to escape us and without doubt would have succeeded in doing so had not the shouting of our Indians that they had nothing to fear re-assured and prevailed upon them to stop. The first question asked them was naturally whether they had anything to eat. Except a fair number of crabs (*Uca una* Margr., *Cancer cordatus* Herbst.) which they had caught at the Waini mouth they had not the slightest thing to offer. We quickly swapped a boatloadful for knives, beads, and looking-glasses and now looked for a place where we could at least soothe the rebellious maws and spend the night. As no suitable spot offered itself in the vicinity of the river-bank, since it was over-grown with an absolutely impenetrable tangle of *Rhizophora, Avicennia* and *Conocarpus*, and in addition was still flooded, Caberalli proposed our turning into one of the innumerable small forest

streams that here fall into the Waini on both sides, where we might hope to attain our object with far greater probability. Although we were still about 70 miles distant from the Waini mouth the effects of ebb and flow were distinctly visible. Caberalli's proposal was accepted, and the first rise, on which we moreover found some travellers' shelters, was heartily welcomed. When the Indians on their numerous journeys find suitable spots for spending the night they hastily erect small shelter-sheds covered with palm-leaves in which to protect themselves from rain, and sling their hammocks: these huts one sees on almost all rivers and subsequent occupiers are supposed to keep them in repair. A post stuck into the banks is the surest sign to an Indian that a shelter of this description is to be found in the near distance. But the roof that gives protection to the men unfortunately offers a sure asylum for snakes, scorpions, the *Scolopendra morsitans*, and the bird-spider (*Mygale avicularia*) for which reason a complete dispersal of these dangerous sleeping-partners must be ensured beforehand by means of smoke.

576. Never before had our boathands jumped out of the corials so quickly, never yet had the wood been transported so rapidly to the four fires blazing cheerfully away, as it was to-day. Everything that only bore resemblance to a pot, everything that held water, was pushed on to the fire. To wait until the water boiled proved far too long for several of the Negroes, who in spite of all dissuasions on our part accordingly threw the crabs alive into the fire to let them roast a little before devouring them. Anybody who has ever been in the predicament of having to satisfy with river-crab the hunger caused by fatiguing work on a two days' fast will also know the agony which the stomach of a voracious eater suffers when its most urgent requirements have to be satisfied with continuous small doses. Even had the crab contained say four times more flesh than that of one of our large cray-fish, it was nevertheless but a drop upon a glowing hot stone. Hardly was a pot emptied of its last boiled crustacean, than it was immediately refilled until finally the very last remaining crab put an end to all further hopes of satisfying the hunger still experienced. The meal had continued an hour and a half during which period no sounds were heard other than the working of the jaws, the breaking of the legs and claws, and the sucking of the flesh out of them: it was only when the final unit had disappeared that this noise stopped, and the dissatisfaction of the Negroes proclaimed afresh. I am absolutely convinced that had the number of crabs offered them been even six times greater, they would not have rested until the last full claw had been devoured.

577. Hardly had we sought our hammocks than the rain fell like a water-spout. The thatching of the simple huts in which we rested was too weak to offer opposition to such a volume of water. Innumerable streams that trickled down from the roof changed our hammocks into inhospitable basins and drove us from our cover. It was an awful night and when morning broke, and the opened flood-gates of Heaven finally closed, our limbs were shivering and shaking with cold. We cast one more glance upon our camp which almost put us in mind of the confusion

on a battle-field, and then quickly took to the boats so as to get rid of our chilly sensations by muscular exertion with the paddles. The sky seemed to have exhausted itself in its fury, so that we dared hope to secure a night's rest in dry hammocks. The delightful prospect of reaching his village to-day, where Caberalli was never tired of telling us about the many fowls and the quantity of cassava bread that would be found, strained every languishing muscle anew. The broad Waini with its dirty water and uniform river-side clothing was soon once more reached: and thanks to the ebb that had set in, we hurried quickly down stream to our longed-for goal. But the results consequent on yesterday's gluttony and damage to their stomachs, as well as on their exposure to the wet and unfavourable night soon made themselves patent: fever and diarrhoea became general among the boathands whose strength for paddling was diminishing every hour.

578. Towards midday we reached the mouth of the Barimani which empties itself here into the Waini from the south-east on its eastern bank, and at the same time constitutes one of the largest tributaries, its breadth amounting to more than 300 feet. The vegetation of its banks along which we now made our way, showed at first slight or no difference from that of the Waini. Only by little and little did it take on another character. The low overflooded banks again became covered with *Laurineae, Leguminosae, Rubiaceae; Melastomaceae*, and *Bombaceae* although all these families so far as regards size and luxuriance, were far inferior to those that we came across on the Barima: even the *Mora excelsa* reached scarcely half the height and circumference of its relatives on that river, where I have already attempted to portray its huge size. The *Manicaria*, *Leopoldinia*, and *Euterpe*, the last-mentioned overladen with ripe berries, even still formed the immediate limits of the banks while innumerable parakeets and parrots, and here and there a *Penelope cristata* offered a light and dainty morning-meal. Our weapons that had rested so long were accordingly quickly got out and at last put to use again: unfortunately we had no opportunity of turning them on the Marudis, for these considered it advisable to hurry off before we could get within shot.

579. With the newly awakened display of Life surrounding us, the strength and spirits of our boathands became revived. Numbers of *Tanagra* and *Euphone* twittered as they flew from branch to branch; a solitary king-fisher, scared by us while watching for its prey, rose ahead with its guttural cry; and the proximity of wandering troops of monkeys was betrayed by a shrill howling, amidst the dark foliage of the trees. If the depression under which we hitherto laboured had been obliterated to a large extent by this refreshingly vivid wealth of nature, the warm invigorating sunshine now completely dispelled it. But the more the delightful landscapes of the neighbourhood inclined us to be cheerful, the more striking was the want of harmony that upset this inclination when the brutality of our Negroes once more aroused our indignation.

580. During the last few days even our tame parrots, apparently overcome with surprise at hearing none of the bird-calls of their unfettered friends, had occupied their perches in silence. But now that

they once again saw their kith and kin flying over the river they burst into such wild shrieks of delight that some of the Negroes, vexed at the joy of these harmless creatures, seized their birds and, before we could prevent them, broke their necks and threw them into the water. I must admit that nothing had as yet cut into my heart so deeply as this callous brutality, and Stöckle exhausted the whole of his rich vocabulary of swear-words in calling the Negroes "useless devil's brats whom the dear God would soon punish for killing such poor little innocent creatures in the outburst of their joy that really hurt no one," etc. The expression of general indignation seemed still further to increase the wickedness of the Negroes, for they sat idly in the corial without moving a limb, and swore they would not take a paddle in their hands again: Mr. King was however, just as determined to leave the two incorrigible ringleaders behind at Caberalli's village.

581. After a time we reached the mouth of the Beara, which streams into the Barimani on the southern bank: the former shows, it is true, only an inconsiderable width, but, on the other hand, a stronger current. From what Caberalli said, the Barimani must form a lake-like expansion a few miles above the mouth of the Beara, to which several small streams flow, and first receives its name from this spot. The commencing ebb still further increased the current of the Beara which even up here still exercised its full effects on the dark brown water. Its rise and fall amounted to from 6 to 7 feet. The banks were exposed to flooding to just the same extent as those of the Barimani, and shewed an almost impenetrable growth of palm above which the Turu (*Oenocarpus Batana* Mart.) and *Maximiliana* raised their proud heads. The immediate river border was occupied by clusters of the elegant *Bactris acanthocarpa* and *Astrocaryum* with which the beautiful shapes of the *Lepidocaryum gracile*, *Euterpe oleracea* and *Leopoldinia* were joined in such close array that their fronds formed an almost impenetrable labyrinth to one's gaze. The graceful and easy curve of these long delicately-shaped leaves, their dainty movement as they swayed higher and lower in the light puffs of evening breeze, together with the rustle peculiar to the palms, to which they give rise, as well as the witching splendour that the parting sunshine at the same time poured over their glorious green—all combined to cast an irresistible spell over heart and eyes and to banish the upset to our feelings caused by the brutality of the men only a short while before.

582. The creeping plants that never ceased their effort, succeeded in effecting with these dense masses of frond what never happened with any foliage tree: overladen with fragrant flowers, they gleamed down from the outermost tips of the highest specimens, and bound palm to palm in aerial festoons. Absorbed in the contemplation of this fairy-like spectacle I had omitted noticing anything else, and was not a little surprised when Mr. King drew my attention to the bows of a dismasted schooner rising out of the water in front of the nose of our corial. We naturally turned for enquiry to Caberalli who shewed himself prepared to explain this puzzling phenomenon as far as it lay in his power. He told us that while he was yet a little boy, the schooner appeared one day

to fetch timber in the neighbourhood, the captain expecting to make his way back to the coast by the itabbos: his arrival however happened to be in the dry season when the river bed gets drained and the water, owing to the flood tide reaching up to here, becomes at the same time absolutely unpalatable: this and a number of other disappointments led to the desertion of the crew who, clandestinely making off with the ship's boat, managed to get home again; some days later the captain was found marooned with his vessel by a party of Indians who got him back to the coast, but by the time he returned with new hands the schooner was not only plundered, but also sunk, since it had supplied the wants of all the neighbouring natives in the way of nails, iron, boards, and the like. In the proximity of the coast the wreck would hardly have attracted any attention, but in this desert it aroused our liveliest interest, and in later times will perhaps afford occasion for the most curious conjectures to many a European who happens to venture so far inland.†

583. The mouth of the small stream Asacota which we greeted with a loud hurrah lay immediately opposite the derelict on the western bank of the Beara. Since the feed of crabs, so pregnant in its results, nothing had passed our lips, and it was therefore with all the keener interest that we drew near to Caberalli's home in the Asacota, of which he had sketched us such a pleasant picture—the promised land that flowed with milk and honey where a plenteous supply of provisions would put an end to our misery, that happy Paradise where girls, even prettier than the daughters of the Waika chief, would toast us with the drinking cups. What was therefore more natural then, that even before reaching the village we should have made up our minds to spend a few days in it!

584. The mouth of the Asacota was so hidden in dense thicket and scrub that only a well-informed person could have found it, and there involuntarily crossed my mind the statement of Waterton, the celebrated English traveller, when he spoke of a river-mouth thus concealed, as probably resembling completely the path trodden by Orpheus on his return from the Styx with his beloved Eurydice, because Ovid's description "Arduus, obliquus, caligene densus opaca"* exactly suited it. The intervening spaces between the branches of the bushes were filled with innumerable blossoms and leaves of lovely orchids such as: *Stanhopea*, *Zygopetalum*, *Burlingtonia*, *Rodriguezia*, several species of *Gongora*, *Maxillaria*, and *Bifrenaria*.

585. Caberalli with his corial in the lead made his way through the apparently impenetrable barrier, we others following him up the snake-like course of the stream until a building at last rose ahead of us on a cleared space. Caberalli who was waiting us here addressed himself to Mr. King and explained that he had had the house built for him, so that on his subsequent journeys of inspection he would be saved the heavy journey up the Asacota to his own settlement. On each subse-

---

† The belief amongst the present-day Warraus is that a Spanish treasure-ship was sunk here by the Caribs who slaughtered the crew. I myself have dived into the spot, but found no trace of the vessel, a boom of which appears to have been noticed by the present Warrau captain, John Coxall of Warramuri, when a boy.—Ed.

* Ovid. Metamorph. X 54.

quent visit all that Mr. King had therefore to do was to fire his gun three times as soon as he got there when he or his people would come and lay their difficulties or wants before him.

586. However flattering this attention was for Mr. King, it was very unpleasant for us to hear Caberalli say that our bigger corials could get no farther, and would therefore have to be left here. Our firm promise to send them the longed-for provisions immediately after arrival at the village prevailed upon two of our people, who could be depended on, to stay behind with the large boats, while we others divided ourselves up amongst the smaller ones. Several cleared spaces which we passed indicated the probable situations of isolated settlements of former times until finally, the stream ever becoming more insignificant, we reached a small savannah or rather a swamp that was completely overgrown with reed and cutting-grass to a height here and there of from four to five feet. The whole flat might be perhaps a quarter of an hour's walk in breadth and an hour's in length: yet the breadth was not everywhere equal, because the hemming-in forest drew back in some spots and advanced in others. During the continuation of my journey to the coast I found such swampy grass-flats to be fairly frequent from now onwards. Their substructure consists of deep mud covered over with a vegetable decking of grass, rush and reed, which however is strong enough to carry the weight of a man, although it continually sways under foot like the rise and fall of a wave. This peculiar swaying of an apparently firm soil reminded me forcibly of many a light-hearted mischievous scene of my boyhood's days when, in spite of the danger threatening, we yelled with enjoyment and coursed along in foolhardy presumption over the ice-flats melting under the rays of the spring sun. Just as a terrible punishment beneath the deceptive covering threatened our foolhardiness there, so here any attempt to stride over the swaying cover of intertwined rootlets may end in a still more dangerous abyss, from which the person sinking cannot extricate himself without speedy assistance, but, entangled in the innumerable tentacles of the roots, must meet with a terrible death from suffocation.

587. The forest growth enclosing this swamp-savannah through which the Asacota follows an ever winding course, appeared regularly dwarfed in certain spots whilst, on several elevations beyond, it had assumed its previous grandeur.

588. We finally reached the landing whence a 12-foot broad pathway led straight to the village of Asacota situate on one of the rises ahead of us. That we more than doubled the pace towards this tempting goal can naturally be imagined by anyone who has been starving for over 24 hours.

589. In the midst of a horrible din of the most varied sounds from innumerable tame monkeys, macaws, parrots, and dogs which thereby wanted either to welcome or scare us, we made our way into the settlement. We preferred a welcome, because Repulse could not have been withstood: hunger had made us so wild and contentious, that at all events Force would have been opposed to Force. The chastening sticks of their irate masters and mistresses convinced us quickly enough, however,

that we had nothing to fear. Hardly was peace re-established than the whole of the residents hastened to obey Caberalli's orders. The men caught up their guns, bows and fishing-rods, while the adult portion of the female sex was not even vouchsafed sufficient time to scrutinise the strange unexpected guests more closely. The first order of the attentive chief was to collect the whole of the bread and meat supply in the settlement and heap it in one of the houses, to put the pepper-pots on the fire, and to make bread of the cassava in stock. While this was being carried out by some of the women with the greatest diligence, others hurried off with baskets to fetch fresh cassava from the field.

590. I shall never forget my delight on the first bit of bread passing my lips, and when with a really ravenous appetite we devoured a meal that everybody would have considered too large for double the number of consumers. Immediately after our arrival an Indian carried the promised rations to our watchmen who had remained behind with the large corials.

591. Our host, honest Caberalli, indeed carried out his promise to the very letter. Without thinking of himself he searched every house, threw the overjoyed Hamlet here a pair of fowls, after twisting their necks, and there a bundle of yams or plantains—in fact, nothing remained hidden from his inquisitive search which the hurry of the surprised housewives might have forgotten, or anxiety for their own requirements had retained. Friend Hamlet was soon surrounded with heaps of the most varied provisions so that at last he did not even rightly know which to begin with. The tireless chief devoted similar attention to the Warrans accompanying us.

592. After the turbulent demands of the inner man had been satisfied I took a more careful survey of our surroundings. The houses were generally large and roomy, and not only in their construction, but also in respect of cleanliness and the love of order that prevailed under their roofs, were in no way inferior to those of the Waikas. A large number of the male residents wore coloured-print shirts, many among the females being clothed in the same way. Associated with these naturally unmistakable signs of advanced culture were still others appertaining to household arrangements, such as tables, chairs, etc: in fact everything that Caberalli had bragged about concerning his residence stood the test of truth, while the high praise bestowed by him on the beautiful young girls of his tribe, which to be sure we had already heard extolled in Georgetown, appeared to be no vain boast at all. Their whole figure was distinguished not only by a beautiful evenness of shape, but particularly by the vigorous fullness of their limbs. An expression of meekness, peculiar to the race, lent a higher charm to the facial features of sufficient interest otherwise, and the long brilliant black hair which either hung down in two pretty plaits or was twined round the crown after the style of a spiral nest contributed an essential ornament to their full figures. The men wore their hair cut short. The painting with Arnatto is not customary with them: in its place the female sex especially tattoo both corners of the mouth, and the situations of the eye-brows, which have been carefully pulled out in early childhood. The pattern over the eyes

consists of a straight line from which several parallel ones extend at right-angles up the forehead, while from each corner of the mouth either one or two curve-like decorations reach up to the temples so as to resemble a moustache curled up at the ends. The colour of their skin is not darker than that of Spaniards and Italians. Whether they have given up the body-painting on account of their intimate intercourse with the Colonists, or whether it was ever at all indigenous to the Arawaks, I have not been able to learn.

593. The hospitality of Caberalli went so far that he immediately put his house at our disposal: this was conspicuous among all the rest not only by its size but also by its comfortable internal arrangements. Soon after our Negroes had filled their maws, an extraordinary change seemed to have taken place in their state of health, for the fever had disappeared without leaving a trace, and the two ringleaders regarded each other cheerily: they did not seem to be worried in the least when Mr. King passed sentence and told them that from now onwards they need not count further upon us, from whom they had nothing more to expect, and that they must look for some other means of returning to Georgetown. Their confidence in finding a place in Caberalli's corial or some other Indian's that might be leaving for the coast as opportunity offered, and the hope of being able to pander here in the meantime to the comforts of the belly, made them regard the verdict in a far from serious light: they nevertheless bitterly deceived themselves.

594. Just as we had settled down in our new home, the women and girls who had been despatched to the cassava fields returned with filled baskets and truly they entirely vindicated the reputation of their tribe, for each new face always seemed to me prettier than the last. Among the coastal Indians the Waikas at all events possess the finest men, the Arawaks on the other hand the finest women. The language also of the Arawaks, and to a greater extent that of the women, has something so melodious and sweet-sounding about it that I might very pertinently compare it with the Italian. In tone and modulation of voice they always suit themselves to the situation or circumstances in which the object of which they are speaking happens to be. Thus one of Caberalli's wives mentioned in an oppressed, wailing and whining tone, that her mother during his absence had been dangerously sick: all the others expressed similar deep grief in the subdued ring of the voice when the conversation happened to concern this woman. The more charmed I was with these signs of sympathy for the misfortunes of others, the more surprised was I on becoming witness of the really uncharitable treatment which a sick person receives at their hands. This neglect of the suffering is constant in all circumstances, and is just as much a failing with parents and intimate connections as it is with those far distantly related.

595. If anyone is confined to his hammock by sickness, it would seem that the unfortunate individual scares every living thing out of his way. Without one word of comfort or sympathy the housewife places the food close to the sick-bed, but no one makes enquiries as to his wants or wishes: everything that he may require he must first of all ask for. Although, for the rest, the sick woman of whom I spoke suffered from

dropsy to a very high degree and was rapidly nearing dissolution, she did not betray her sufferings by any sound: I heard her neither moan nor groan, which certainly would not have escaped me as she lay quite close by.

596. A peculiarity worthy of remark in the language of the Arawaks appeared to me in that it possesses several words which only the men, and others which only the women give expression to: thus among the former "yes" is "ehe," with the women it is "tare."

597. I was horrified when Mr. King drew my attention to the men's calves, and saw them covered with scars to such a degree that in some cases I could not find a single finger-breadth's space that was sound. I will mention the cause of these wounds subsequently, because I learnt it by personal experience.

598. Polygamy is indigenous also among the Arawaks, and a chief often possesses four to five wives. Amongst the many friendly females I was especially struck by some young women who had not only been despoiled of all their finery and ornaments, but even of the generally worn print clothing and their beautiful hair. On enquiring the reason for this extraordinary appearance, I learnt that their husbands had died some while ago and that this was the sign of sorrow over their loss. So when the head of the family dies, the nearest relatives of the deceased come and crop the hair of his wives who have also to doff their clothes during the period of mourning. It is not until the hair has grown to a certain length that the women are allowed to resume their garments, or to lay aside their widowhood.

599. Yet it is not only in these peculiarities, but also in their whole remaining customs and habits of life, as observed during my subsequent stay amongst them, that it became still more manifest that the Arawaks differ essentially from all other tribes of British Guiana. Their traditions concerning the creation of the world, of a deluge, etc., testified plainly that they occupy a higher plane of culture than most other natives. The men possess a really rare skill in plaiting what they call Pegals, baskets with the most beautiful ancient-Greek patterns: they utilise for their manufacture the outer bast-sheath of the stalk of a *Calathea* which they cut in long strips and colour in various ways. These baskets and their plaited water-proof trunks, of which the latter are made double-lined with the *Calathea* leaves placed in between, constitute a main article of trade with Georgetown, particularly the trunks which, on account of their lightness, are especially suitable for travelling-cases. Alongside this desirable "trade" manufactured by the men, can be placed the less readily bought earthenware pottery of the women. The shape of this ware has also much resemblance with that of the old Etruscan, while the large goblets are particularly valued on account of their excellent property of generally keeping the water inside them cool. The sellers usually spend the proceeds of their sale on objects of a more convenient domestic setting.

600. The news of Mr. King's arrival must have spread itself fairly quickly, because by earliest dawn there had already arrived whole processions of Indians from out of the neighbouring settlements to bring

their complaints, troubles and contentions for adjustment before the highest tribunal, before Mr. King, whom they all called "Fiscal," a term which probably was more familiar to them from the old Dutch times than the new title "Superintendent."

601. This simple legal public procedure, than which neither the Bar of England nor France could offer a more interesting spectacle, occupied my whole attention: the clean unvarnished truth, and Nature in the expression of its most heterogeneous emotions, spreading a peculiar charm over the animated scene. Although it might not have been Mr. King's intention to hold Court to-day, he nevertheless considered it necessary, owing to the large number of complaints. The chief case was a divorce: a young and very beautiful Arawak who had married a Warrau sought judicial separation because her husband had treated her so tyrannically of late that hardly a day passed without her being beaten, and in addition to that he had sold all her property. As Mr. King was just as little conversant with the Arawak language as I was, Caberalli acted as interpreter.

602. After Mr. King had once more heard the complaint, he called upon the witnesses, and every attentive listener, even if he did not know a single word of the language, could already gather the whole history of joy and sorrow that this young woman had experienced from the tone and modulation of voice of those who were called on her behalf. The first witness was an oldish woman who, with an admirable flexibility of voice, portrayed the complete life-story of the unhappy married creature, an echo as it were of her happiness and her suffering. With brisk and passionately excited voice she described first of all the beauty of the unfortunate creature up to the time when as a girl she would hurry still with a light step through the village and all the Arawak youth looked at and longed for her, whereupon she pointed to all the men standing aside of her in the circle, who were said to have belonged to the crowd of the complainant's admirers: with equally vigorous and not less proud tone she enumerated the presents which she had had heaped upon her by the young men: and yet when alone on her way to the field, or when hurrying off by herself to the forest, she had not deigned to look at them: she had given her smile to none—and now the hitherto fiery and animated voice became more subdued and gradually sadder and heavier, whereby she probably wanted to express the surprise and astonishment caused by the pretty wench disdaining the Arawaks and choosing a Warrau. The Warrau, she continued, came to the village and found favour in the eyes of the prettiest girl in the settlement, and the hitherto only suppressed melancholy utterance changed to a deprecating and whining note, as she described the parting from her parents and her girl friends: until at last, when recounting the rapid change in the young people's matrimonial relations, she let her voice fall into a weeping and wailing key. Within a short while the Warrau had then sold his wife's finery, her presents, and her print-cloth, and had beaten and even threatened to kill her. It was this threat that had induced the woman to leave her husband and run off to her parents. But the man was still in possession of her remaining property, of which he refused to give delivery.

603. After this witness had stated her case thus characteristically, there followed the examination of yet several others, both women and men, the latter developing a similar modulation of voice, if not to the same extent.

604. Although during the whole examination of the witnesses I watched the married couple who were standing their trial, with active interest, my attention was riveted in a still greater degree upon the complainant when Mr. King now directed his enquiry to her. With downcast eyes the really beautiful young woman answered all the charges in that plaintive and subdued tone with which the first witness had described the scenes of unhappiness. At first she fixed her eyes intently upon a particular spot on the ground and only later did she raise her head just for a moment, probably to convince herself of the impressions her replies were making upon Mr. King. The same deep sense of suffering expressed in her features and in the whole of her bearing had spread itself over all the women around. The defendant husband who stood apart and alone on the opposite side, directed his proud and steadfast looks at Mr. King, though he now and again let his glance fall upon his wife. I must admit that the woman's choice could not meet with disapproval, for although I had seen so many Warraus, I had never yet noted a man of such faultless physique, with so daring and spirited a gaze. His long, black, thick, and at the same time somewhat curly hair was carefully combed and covered with a broad straw hat. Below the eyes, thrilling with fire yet at the same time imbued with a melancholy and half contemptuous look, sloped a well-developed aquiline nose—in short, his whole appearance reminded me of the picture of a hero of the Spanish Guerillas in fancy costume, rather than a member of the Warrau tribe. His mental faculties seemed to harmonise entirely with his physical pre-eminence, for he carried out his defence with such grit and such a stream of eloquence, that my surprise was ever on the increase. According to Caberalli's translation it came out that he deemed his wife's laziness as great as her beauty, a reproach which he expressed by a comparison between her and a sloth. When returning from a trip, a hunting or fishing expedition, he had never found anything but empty pots, never a drink of paiwari, so that he had always to beg something from a neighbour. At first he had reproved his wife and then warned her—but all to no purpose: as things were on the one day, so they remained the next, and only too soon did he and his lazy wife become the butt and bye-word of the whole village. Such a disgrace however a Warrau could not stand. Although he readily admitted that beating was only intended for dogs, he had been unable to control himself any longer and had struck his wife: but even this had done her no good, and he would rather have nothing more to do with her.

605. Though the Warrau, during his wife's complaint, had stood quite motionless and without moving a muscle of his face, staring fixedly in front of him, his wife on the other hand, judging from the active and painful struggle depicted upon her features, betrayed how little she could control the mental excitement, the agony, which these probably false charges had aroused in her. With every fresh accusation, with each

reproach attaining its climax, she raised her passionate face for a second, glanced at her husband with a pained yet at the same time deeply contemptuous expression, and then let her head sink upon her shoulders again. Our Warraus, but particularly Maicerwari, watched and listened with the most rapt attention to the whole course of the enquiry without a sound of approval or disapproval escaping them.

606. Mr. King accordingly felt himself at least bound to punish the Warrau for having assaulted his wife, and got Caberalli to explain how wrongly and unbecomingly he had acted, and at the same time to tell him what punishment the Great Queen had ordered to be inflicted when white married people beat one another. In conformity with this law he felt himself bound in this instance to make him pay two dollars as compensation to his wife, whom he at the same time ordered was to be allowed to return to her parents. With his chin supported between the thumb and forefinger of his right hand, the Warrau listened to the verdict and remained in this pensive attitude long after Mr. King had finished; Caberalli at last addressed and asked him whether he was satisfied with it, when he replied "Had the Great Queen known of the existence of such lazy women as my wife, she would certainly never have made such a law, but would have allowed the men to beat at least the lazy ones." On hearing this naive reply I could not keep myself from laughing, whereat the husband seemed to be surprised. "That it just fell in with his wishes," he continued, "that she should return to her parents, but the two dollars he could not pay, as he had not got them." When, however, Mr. King replied that he must therefore come with him to Georgetown, he hurried off after a short while to borrow the money in his own village. I firmly believed he would never return, but I was mistaken: in the course of three hours he was again in Mr. King's presence and put down the compensation money which was now handed over to his wife.

607. The remaining complaints to be heard also consisted for the most part of disputes with Warraus who had bought corials from the Arawaks, and had not paid for them, etc., until at last Mr. King closed his Court at sundown. I deeply regretted that I was conversant neither with the Arawak nor Warrau language, because by Caberalli's translation a number of personal traits in the naive replies and speeches of complainant and defendant were certainly lost to me.

608. As we had only engaged the Warraus as far as here, we paid them off what we owed them with "trade" in the evening so that we should suffer no delay on this account next morning when we wanted to leave for Georgetown. The grief-stricken face of Maicerwari betrayed only too clearly how deeply he felt the pain of parting from the members of his tribe.

609. Leaving Asacota the following day we returned to our corials where we found the people whom we had left behind in sound health and strength. No sooner had Mr. King informed the two rebellious Negroes that he had made up his mind definitely to leave them behind here, than they went and begged Caberalli for a place in his corial: he however refused them with a contemptuous "No," One expectation being accordingly

shattered, the hitherto scornful laughter of the despicable fellows soon began to die away. A second request to the Asacota residents met with an equally unsatisfactory reply: no one wanted to have anything to do with the low brutes, and their former defiance now suddenly changed into a fawning toadyism with which they still hoped to shake Mr. King's determination: they already seemed to have every confidence of succeeding because, on our departure from Asacota, this gentleman had allowed them to accompany us down to the big corial. But when on arriving there they heard Mr. King give orders to the captain to take out of the boat the whole of their belongings already in it and put them ashore, the terror portrayed on both their faces could not have expressed itself more plainly than it would have done on ours had a thunderbolt out of the blue struck the ground at our very feet. Like motionless statues they stood speechless before us for a long while, staring into vacancy, and were seized with such frantic despair when their bundles were actually laid down close beside them that, wailing and whining, they threw themselves before Mr. King, kissed and clung round his feet, then again wrung their hands, and begged him for the love of God not to leave them here, nor expose them to death, because the Indians would certainly let them starve, and without their help they could not find their way to Georgetown. When they saw that Mr. King was not to be turned from his purpose they came crying to me on their knees, and again begged for help. As soon as all the crew were settled in the corial, both Negroes frantically clung on to my arms and prevented me leaving the spot. Though the common brutes, whose previous conduct had been so insulting and spiteful, appeared most contemptible to me with all this dog-like behaviour, I nevertheless finally felt sorry for them and prevailed upon Mr. King to let them occupy their former places. This exhibition of earnestness on the part of Mr. King to put his threats into execution was followed by the most excellent results. No one, from now on, ventured to disobey our orders or to omit carrying out any of them.

610. After again reaching the Beara and following a stretch of it we entered the Barabara on its eastern bank: this completely resembled the Asacota both in respect to breadth as well as in the density of vegetation along its edges.

611. Not a single ray of sunshine could pierce the tree tops thickly interlaced with bush-rope, but wherever the eye turned it met with flowering orchids that covered the branches of the ancient trees with a close texture. Amongst these the lovely *Maxillaria cristata* Lindl. rendered itself conspicuous with its charming flowers, while associated with it were yet to be seen the *Maxillaria Parkerii* Hook., *M. pumila* Hook., *M. chlorantha* Bot. Reg., *M. foveata* Lindl., *M. graminea* Lindl., *M. porrecta* Bot. Reg., and *M. unciata* Bot Reg., so that almost all the species of *Maxillaria* seemed to be gathered here in one and the same spot. *Pleurothallis* and *Fernandezia* decorated the trunks and with their beautifully shaped leaves gave them the appearance of garlanded columns, while the elegant *Oncidium iridifolium* with its yellow blossoms lent a bright touch of colour to the sombre foliage of the undergrowth; the *Zygopetalum rostratum* Hook. and *Bifrenaria* fought with the

Pleurothallis for first place on the trunks, the elegant *Catasetum* and equally pretty-looking *Myanthus* having to be satisfied with the thread-like roots of the Aroids hanging down from the boughs. Besides the families and species mentioned, the glorious *Oncidium Lanceanum* Lindl., with its broad spotted leaves as well as the *Coryanthes maculata* and *macrantha* Hook., with their huge flowers were particularly noticeable. In between these hung a number of black ants' nests, which the busy creatures had cemented to the aerial roots swaying from the branches; the continual rustling and crackling to be heard in the close neighbourhood showed how busily the little creatures worked. Woe to us when an imprudent jolt brought a nest like that into our corial!

612. After following the Barabara for some time we entered the Kamwata, the width and riverside vegetation of which corresponded entirely with that of the Barabara. We had not followed it for long when the forest, suddenly opening ahead of us, exposed to view a huge broad stretch of water and swamp which, except for its greater size, exactly resembled what we had seen at Asacota. The extensive panorama over the green yet treacherously-boggy meadow and placid swamp gladdened our eyes all the more, considering that our horizon for the last three months had been limited by trees, to narrow flats, or by bends in the river, to short stretches of water.

613. On reaching this very extensive savannah-swamp we immediately made our way into the Itabbo which here forms a direct waterway with the Morocco, and bears intimate comparison with the branch-off to the Orinoco, the Casiquiare. The appearance of this big lake, made much greater by the high level of the water, was extraordinary, and presented a charming picture. Thousands upon thousands of *Crinum* thrust their dazzling white flowers upon the lightly ruffled crystal surface while a number of scattered groups of palms and foliage trees formed delightful fairy islands. Here I also saw the first *Mauritia flexuosa* Linn. that lavishly spread their giant fan-shaped fronds over the silvery waters. The real channel made its way in a tortuous course through this enchanted area: it sometimes approached either the border of the forest on the edges of the savannah or one of those lovely oases, or sometimes cut across the same and made its way more into the centre of the lake. My eyes rested with real joy upon this delightful scene.

614. The thick network of several species of *Nymphaea* rendered every stroke of the paddles difficult and sometimes so hindered our progress, that we were on several occasions forced to avoid them and make a detour along the clear portions of the water. Here a number of white flowers of *Rhynchanthera dichotoma* DeC., elegant groups of fern, the *Blechnum angustifolium* Willd., *Aspidium gongylodes* Kl. (*Aspidium gongyloides* Skuhr.) and dark reeds showed up from below. Though the thousands of large white flowers of the *Nymphaea* closed at sundown they nevertheless still continued to fill the air with their perfume. Mr. King had fixed the Catholic Mission Station on the Morocco as the terminus of the day's journey because he was well acquainted with the missionary, Father Cullen*, an Irishman.

---

* Here and elsewhere, Schomburgk spells the name as Collins but this is an error (Ed.)

615. Delighted with the glorious landscape I hurried ahead with my little corial into a thick forest of palms through which it continued to make its way, and in speechless astonishment stood up in the bows when, on the forest suddenly opening afresh, there spread before me a second stretch of water with densely-wooded hills rising beyond it in every quarter. From the top of one of these heights, crowned with forest, very close to where I passed, there peeped the friendly roofs of a settlement which, on account of its many fruit-trees seeming to indicate undoubted European cultivation, I took to be the promised Mission Station. The timid withdrawal of some Indian women who gazed down upon us in surprise, already began to make my surmise less probable, when a large shed in which I noticed several chairs, a table with a numerous collection of glass bottles, beer- and wine-glasses, plates and dishes again weakened my doubts: but a small elegant house, built in European style, a little distance apart, to the side of the shed and several open trunks with articles of clothing that could be seen in the inner room through the unclosed door, finally banished every consideration, for to whom could such things belong if not to the Missionary? In this hope that the day's journey must be at an end I hurried on up to an Indian woman trembling with fright and reserve, and enquired after the owner: her depressing reply was that he had died a few days before. Bewailing our own and the Missionary's misfortune, I was just about to make myself at home when Mr. King arrived at the landing and called out to me that I must not stay any longer as the Mission station was still a considerable way off. Likewise deceived, I thought to myself as I hurried down the rise to get to Mr. King as quickly as I could and learn something concerning the previous owner of the property. I now discovered that this had been the chieftain's village. He had spent his youth in Georgetown, where he had found the institutions and life of the whites so pleasant that, when succeeding to the title, he had prided himself on introducing European manners and customs into his quarters. In this he was supported by the preliminary work of his father who, already making a commencement at it, had planted the fruit trees. The peculiar custom of the Warraus, to which tribe the settlement belonged, of using nothing belonging to a deceased person was the reason why everything lay about undisturbed like this and remained just as it was found at the time of the man's death. Three years later (II. 865) I visited the settlement again: a new chief had in the meantime moved into the house, but the table with the bottles and glasses still stood untouched in its old place, the whole having been transformed into a densely populated colony of spiders, and all thickly covered with their cobwebs

616. After a while we reached the mouth of the Itabbo in the Morocco which we now followed. Here also a broad border of *Nymphaea* stretched along both banks but the current made their junction in the middle of the stream impossible, and so the innumerable obstacles against which we had contended all day long suddenly disappeared. We rapidly made our way down stream but nightfall unfortunately completely blocked the view of the glorious surroundings. It was already midnight and the longed-for goal not yet reached. The otherwise rebellious

Negroes who had never previously refrained from giving vent to their bad tempers when prevented pitching camp at sundown were as silent as the life surrounding us. The lesson they had been taught this morning was still too fresh in their memory, and their inward exasperation was under such firm control, that their outward calm actually eclipsed Nature's because the latter would be interrupted now and again by a water-fowl taking to the wing, by the sad melancholy note of the goat-sucker or of an owl, or by the buzzing of insects swarming around the closed *Nymphaeae*. At last when even my own patience threatened to give way we heard at a fair distance off the sounds of several flutes and violins, a sure sign that we were now within the precincts of the Mission: a few shots on our part ought therefore to let the frolickers know that there were still some uninvited guests coming to the feast.

617. The first boat stopped at the landing, its repeated gun-fire notifying the residents that strangers had arrived: a large lantern was soon seen swaying in our direction and then Mr. King greeted Missionary Cullen who was carrying it. The latter received us in very friendly fashion but regretted that we had not come the day before when he had celebrated some Saint's day with his wards. Midnight was long past: but so as to give the loudest expression he possibly could to the joy felt by him at our arrival, he ordered the boy accompanying him to use up the whole supply of powder and fire the small mortar that he possessed, instructions which the lad right willingly obeyed. Under a continued cannonade we accordingly climbed the hill on which the Mission stood and entered our cordial host's quarters which at the same time served as Parish Church. Besides Fr. Cullen, we met his brother, a young surgeon only arrived from Ireland a few weeks before just to visit his brother, as well as a young catechist whom the Bishop had despatched from Georgetown with letters. Kitchen and cellar were put under contribution afresh, and everything that had not been devoured at the Saint's feast, was placed at our disposal. The quieter we new arrivals had whiled away the time before midnight the noisier did we spend the subsequent hours. A huge bowl of whiskey-punch shortly steamed upon the table: it was quickly emptied and soon made the company lively. Irish songs followed Irish speeches, till finally by dawn of day, we sneaked into our hammocks. On opening my eyes in broad daylight I got a shock: in front of me was the High Altar with its crucifix rising above the empty bottles and glasses that had been heaped up around it, while the steps served as stalls for several goats! While still upset over this desecration of the Most Holy, I heard the priest's loud voice driving the goats off the steps and us out of our hammocks: he had yet to say Mass during the forenoon, and accordingly everything profane had to be removed to a distance. Were all these persons in earnest or were they hypocrites? I believed the former, because Cullen saw nothing scandalous in it, and thought my surprise unaccountable.

618. At the hour appointed some 300 people or so came up for their devotions, stepped up to Fr. Cullen who now seemed quite another

person, kissed his hand, and individually received his blessing. It was a fine stamp of men who were now rallied before the altar, and their outward appearance already led us to expect that they stood upon a higher plane of civilization than the natives around. The women and girls wore print dresses and seemed to be very fond of finery, because I noticed amongst them many gold chains, ear-trinkets and rings, while the beautiful shiny black hair was tastefully done up in long plaits hanging down the back. The men wore white trousers and jackets. Here and there a half-naked Warrau rendered himself conspicuous among the circle of devotees, and showed all the more plainly that Indian blood did not alone flow in the veins of the former. The little choir-boys, whose white gowns were in marked contrast with their brown faces and black hair, were thoroughly trained in their office.

619. On conclusion of the Mass the crowd tarried awhile in front of the Church chatting with one another, when I recognised from the airs and graces with which the beauties promenaded up and down, that they were of Spanish blood even before Father Cullen confirmed it.

620. The mission population approximated 500 residents, the offspring of Spaniards and Indian women, generally known in the Colony under the name of "Spanish Indians." During the Revolution in Columbia in 1818 and 1819 these fled to English soil and territory, placed themselves under the protection of the British flag and settled down on the scattered hills of the Morocco savannah which they changed into a flourishing garden of fruits and vegetables. They generally speak Spanish and stand on a higher level of culture than this desolate waste might lead one to expect.

621. In the course of the lively conversation carried on outside the Church we had already heard from the catechist the disquieting news that not only yellow fever but also black pox had broken out in Georgetown to a frightful extent. This information was still further dilated upon at noon by the arrival of the Post-holder of the Pomeroon, Mr. McClintock. Smallpox had attacked the Arawaks of that river where it had caused considerable loss and spread general terror. It was not to be wondered at that up to now hardly any of those afflicted by the dread disease had been saved, considering that, unfamiliar with its nature, the Indians had applied a most absurd method of treatment, in which, as the Post-Holder assured us, they held such implicit faith, that neither remonstrance nor indeed any power on earth could break them of it: the absolutely unsuitable procedure in question is as it were born in their flesh and blood from their treatment of fever in general. More than this, no one could remember smallpox ever having attacked them before.The Government unfortunately did not seem to want to do anything on behalf of the poor people, because up till now it had not even been considered necessary to send a medical man to the areas affected. A large number of Indians had already abandoned their settlements and withdrawn into the interior which naturally gave reason to fear that the virus of the disease would be spread.

622. My three Indians, who also must have heard the news, evidently considered prompt flight to be the safest way of escaping the Angel of Destruction, for when I looked for them next morning not a trace of them was to be seen, they not having even asked beforehand for the money standing to their credit. Even Caberalli's people became troublesome and showed no inclination to accompany him further, with the result that he had to exert his whole authority and employ all his arts of persuasion to get them to change their minds.

623. As there was no time yesterday to have a look round the neighbourhood of the settlement, I did so to-day. The Church, as I have already mentioned, served the Missionary at the same time as residential quarters. Some Indian houses were situate upon one of the highest rises from which one enjoyed, from the East and North, a lovely panorama over the broad savannah with its forested hills which seemed to possess a peculiar and distinctly restricted vegetation of its own. Besides a number of bushy *Melastomaceae* I particularly noticed *Posoqueria longiflora* Aubl. with its innumerable white dependent blossoms and orange coloured fruits, as well as several *Eugeniae* and dainty legumes like *Malvaceae, Soloneae, Commelineae, Acanthraceae*, and *Compositae* which adorned the lovely meadow-carpet with the alternating colours of their flowers. The large and flourishing coffee-bushes bore sufficient testimony to the fertility of the soil and it hardly wanted Fr. Cullen's assurance that the settlers harvested more beans than they required and could therefore sell a considerable proportion. Were there not upon this hill an innumerable quantity of ants, and exactly of that kind, *Atta cephalotes* (Cushy-ant of the Colonists), which is particularly noxious to the cassava plantations, I could have envied this gentleman his little Paradise. These terrible destroyers of the cassava and plantain fields have their dwellings underground and increase at such an enormous rate that their nests resemble huge mounds of thrown-up earth. A cassava or plantain cultivation in which they are nested soon resembles our timber areas after the caterpillars have devastated them. In a short while the ants eat away the whole of the leaves and drag them into their subterranean dwellings. If a field is once visited and robbed by them, the destruction of the whole is to be feared. Even when their nests are situate quarter of an hour distant they will find the plantation and soon clear all the way up to it one of the most busily occupied paths imaginable. However sad it must be for the owner of a cassava field thus threatened by these pads, they proved extremely interesting for me and I devoted hours at a time in watching them. My readers might therefore let me describe in more detail the lives and doings of these intelligent and industrious creatures in a cassava plantation. The track is about half a foot wide and somewhat depressed, but whether on account of the continual communication along it, or for some other reason, I am not in a position to determine: the rails of a railroad are hardly cleaner and smoother. With utmost military precision large numbers of the insects, ever on the move, march along it in double column, one towards, the other from, the field. In the latter column every single individual carries a piece of leaf the size of a threepenny bit, holding it erect in its

mandibles, for which reason the Colonists also call it Umbrella ant: the other column is occupied by insects returning to the field. If the interval between the field and nest is too great, one notices another party coming to meet the tired carriers half-way and relieving them of their burdens which they now transport to headquarters, the others returning to the field. Although thousands are moving up and down not one insect steps in another's way, not one insect blocks the advance, or checks those which follow on in busy haste: everything runs as continuously and smoothly as clockwork. If the path is traced up to the site of destruction, one finds on it a third contingent consisting of the strongest and largest individuals that are restlessly engaged in biting the little round pieces out of the leaves and letting them fall on the ground where they are picked up by the busy carriers and conveyed away. Nothing, neither fire nor water, nor any break in the pathway nor any other obstacle can prevail upon them to give up their work. Should thousands be killed by extreme violence, not a single corpse will be seen within a few hours: or directly the danger is over the dead bodies are removed. If the track be barred by some object which the feeble efforts of the ants fail to remove, they will soon get round it: if it be destroyed completely, one finds it re-established within a short while.

624. The ants themselves, especially the winged females, are deemed a delicacy by the Indians who bite off the abdomen which is eaten raw or roasted: it has indeed a pleasant sweet taste.

625. In these ant-mounds is usually to be found the *Coecilia annulata*, the "Two-headed Snake" as the Colonists call it, allied to the blindworms (*Lurchen*) which, according to what the Indians say, is fed by the ants like the *Claviger* by the beetles. I noticed for myself during my subsequent stay in the Morocco that the *Coecilia* is really a frequent resident in the nests and Fr. Cullen assured us that when he tried to destroy the troublesome insects by fires lighted over their mounds or by digging them out, he had come across numbers of the worm. Now, whether the power of attraction depends upon the animal heat or particular atmosphere present in these mounds, or whether it is that the *Coecilia*, which always lives in the ground, only seeks the loose soil contained in them for the purpose of digging itself in with greater facility—the ants at any rate tolerate the worm, and the latter seeks for the ants and so both live together in brotherly concord. All Fr. Cullen's attempts to get rid of the nuisance had hitherto proved fruitless and his earnest wish to lay out a garden close to the church remained impracticable: for what he planted to-day would to-morrow either disappear without a trace or be completely destroyed. Arsenic seems the only thing to exterminate them—but what amount would be necessary to destroy such millions?

626. As we had made up our minds to leave Morocco next morning the Father expressed a wish to accompany us to Georgetown where he intended collecting subscriptions to which we gladly contributed our mite for building a church separate from his private quarters. The last hours of our stay were once more spent in true Irish fashion: songs

alternated by speeches, and huge bowls of whiskey punch with endless toasts.

627. After our host had replaced my runaway Indians with some of his own people, our little flotilla, increased by the two boats in which the Missionary, his brother, and the catechist had taken passage, started away at daybreak.

628. The Morocco continues its course for a considerable distance along the same flat which, broken up by rising hills and forested areas of larger or smaller size, stretches far to the eastward until it runs out into the immediate coast at the mouth of the Pomeroon and Morocco. During a subsequent stay in this district I became more intimately acquainted with the south-eastern limits of this tract.

629. The change of vegetation showed that we were getting nearer the coast, until finally the *Rhizophora,* once more met with, vouched for its being actually reached when the blue-green waters of the Atlantic Ocean, across which our small corials had to risk a 7-mile voyage to the Pomeroon, shone through the Morocco mouth. The strong breakers did not allow of our hugging the coast with the frail vessels, but forced us to follow a course considerably out to sea so as to keep beyond their reach, as well as that of the large number of mud-banks which usually are found in plenty along the whole Guiana coast, but more especially here. That these mud-banks, so dangerous to coastal shipping, constitute the main nucleus in the ever nascent formation of the Guiana coast, admits of no doubt, although their origin, not having been ascertained with certainty, has been explained along the most varied lines. Their often magically rapid appearance and disappearance have at all events something very mysterious about it. Where the eye, only a few days before, saw but a smooth surface of water, there suddenly appear more or less soft mud-banks of varying size which, after a short time, are just as quickly washed away by the breakers or currents. Often only isolated portions disappear, or become outwardly altered, but frequently the high washing-tide carries them bodily on to the immediate coast-line where, out of reach of the general drift and rise and fall of the waves, they come to form part and parcel of it, so to speak, through the agencies of the *Rhizophora, Avicennia* and *Conocarpus.* The whole of the extensive coast-line is thus subject to continual change, and many a dweller on the coast who a few years before could look from his windows out on the sea, now finds himself separated from it by a thick forest of *Rhizophora.* The eastern point of Cape Nassau, that at the same time builds the eastern bank of the Pomeroon, affords the most convincing proof of this remark. Mr. McClintock assured me that during his six years' residence this had lengthened about one-eighth of a mile, while the spit on the western bank, on the other hand, had gained about forty feet. Further confirmation of this continual increase of sea-front is also forthcoming in the successive growths of coast-vegetation which, according to their different ages, rise one above the other inland like terraces of an amphitheatre. The origin of these mud-banks is for the most part attributed to the detritus which, during the rainy season and heavy floods the rivers roll into the sea. Even were I to admit that this might have something to

do with it, its contribution could only be insignificant amidst the huge quantity of alluvium, for the sea is so chock full of mud and mire along an area at least 150 miles long and in some places 10 miles out, that in particular spots even the waves themselves resemble thin soft ooze. Furthermore this generally accepted explanation is absolutely incompatible with a piece of coastland so small as that of Guiana and especially all the more so because the interior mountain-country whence the rivers bear their bright translucent waters to the sea almost always belong to the class of primitive rocks and accordingly can contribute but little to the accumulations. Again, were the immediate coast alone to have supplied these huge masses of mud it must have been washed away under the sea ages ago. That the causes for this phenomenon are to be sought not alone in the lands immediately adjacent to the sea, but also, judging from their very great magnitude, in some other part of the world or at least quite elsewhere in America, is further indicated by the species of mussel and snail which I found not only upon the mud and sand-banks at the mouth of the Waini but along the whole coast.*

630. As the sea was fairly smooth we fortunately reached without accident the Pomeroon mouth, where, on the western bank, is Mr. McClintock's station, which we chose for our night's camp: we were most heartily welcomed by Mrs. McClintock on our arrival.

631. From the mouth of the Waini the coast stretches in a south-easterly direction towards the mouth of the Morocco and forms on its way Pitch Bay which is a mile wide and 1½ mile deep. A kind of pitch is said to have gushed out of the bottom of this bay in earlier days and being tossed about on the water for a time to have become as hard as stone.† If this really was the case formerly, its source must be dried up now. After being driven out of the Barima the Dutch had built a Fort just at the mouth of the Morocco: traces of the fascine work and of the walls can still be seen at dead low water. The Dutch towns of Middleburg and Vlissingen on the contrary planned a colony on the Pomeroon in the year 1657. The spit on the western bank has been guarded by a military post since 1754 to check the frequent escapes of slaves by water: that on the eastern bank forms Cape Nassau, which is encircled with a mudbank stretching over an hour out to sea in a north-easterly direction.

---

* The greater part of the material for the mud-flats probably comes from the Amazon River (E. E. W).

† In connection with this Pitch Bay, the oil expert, Mr. Geo. B. Reynolds, has kindly drawn my attention to the following extract (translation) from J. J. Hartsinck's "Beschreyving van Guiana of de Wild Kust in Zuid Amerika" Amsterdam. 1770. pp. 257-8.

"The first rivers which we, coming from the Oronoque, meet in Dutch Guiana, are the
"Creeks or Rivers of Baryma. about one mile in width, where we formerly have had a Station:
"three miles further, the River Amachara, of the same width, which, together with the above
"mentioned, discharge themselves in the Mouth of the river Oronoque: fully three miles
"in a more Easterly direction, the Creek Mocco Mocco: yet two miles further, the River Waine
"three quarters of a mile in width but shallow.

"The Coast then extends itself in a South-South-Easterly direction and forms, at one and
"a half miles in a more South Easterly direction, a Bay, named the "Bay of Peche" one mile in
"width and one and a half mile in depth, running thus up to the River Moruga, named by us
"Marocke, situated six miles from the Waine.

"In the said Bay a kind of Pitch oozes from the soil, which, floating on the water for some
"time becomes as hard as stone." (Ed.)

632. Our kindly hostess prepared one of the most inviting of dishes with the tastiest of fish, in the enjoyment of which however, we were most bitterly interrupted. Mr. King had already warned me at Barima mouth where we were so frightfully punished by the mosquitoes, to bear the trouble patiently, because we should find far greater swarms of them at the mouth of the Pomeroon. At the time I thought this was an exaggeration but now, sad to say, I had to convince myself of its truth. On the Pomeroon these myriads of blood-suckers only appear periodically: unfortunately however our arrival coincided with one of such occasions, a fact that Mrs. McClintock had already deplored when we got there.

633. Hardly had the sun sunk below the horizon than the frightful bloodthirsty hordes came and besieged the windows and doors. In spite of all the openings being closed, as we thought, the room was only too rapidly filled with the threatening cannibals, and a quiet meal was not to be thought of. It could be truthfully said of us, "Thou feedest them with the bread of tears, and givest them tears to drink in great measure." The species was nevertheless quite unknown to me: the Colonists call them "Yellow nippers." They have a blue thorax and white terminal joints on their feet: their sting however is more painful than that of all species of gnat I had hitherto experienced, possessing in conjunction with it, as they do, such a long sucking-proboscis that even a Russian fur would not be proof against it. Poor Stöckle also finding the plague unbearable came into our room with whining voice, swelled hands and face, and begged to be allowed to sit in here as the sinful beasts would eat all the skin off these parts if he remained outside any longer. It was quite evident beforehand that our sleep would be rendered as distressing as our dinner. As these bloodsuckers seldom fly higher than 16 feet from the ground Mrs. McClintock had a little room high up under the roof fitted as a bedroom. We had, it is true, slung our hammocks in the large room, and our friendly hostess had brought out everything that had any resemblance at all to a mosquito-net, yet in spite of all this we were only too soon forced to leave our beds again, and run like mad round the room till morning. The sternest Puritan would have excused even Mr. King cursing more than once during the course of the night. All crevices and holes were stopped and the room so filled with steam and smoke that we could hardly bear it ourselves, but all in vain. To rush out into the open would be the same thing as jumping out of the frying pan into the fire, for no sooner was the door opened which was now and again necessary, owing to the smoke, than whole clouds of mosquitoes streamed in and like harpies, fell upon us pitiable victims. While we were thus raving inside the house, the swearing and cursing of our people was audible outside. The latter suddenly stopped, while the silence that now succeeded assured us that they must have discovered a certain cure which really turned out to be the case: they had taken refuge in the boat and gone out to sea beyond reach of their cannibal followers: even if they did not obtain comfort for the night they nevertheless secured repose. One of the coloured men had even climbed into the crow's nest high up on the

mast that stood in front of the dwelling and served as a signal station. Our poor catechist was troubled most, because the mosquitoes seemed to have specially singled out his thin-haired head and large bald spot for their field of operations. Groaning and cursing, the man of Peace wound several cloths around his head but all to no purpose, because the stings of the fiends pierced them, and to save it he had to stick on his hat the whole night through. At last the longed-for day broke and we greeted it with glee—unfortunately, we could not leave this awful place, for the ebb had just set in and proved so strong that our boathands would not have been able to pull against it. It was only about 10 o'clock that the pests disappeared. When our attentive hostess came to bid us good-morning after a bad night, we expressed surprise at her being able to stay and pass her life in such a spot as this, but she assured us that it was not too bad, for these swarms only appeared at certain times, but as luck would have it, we had come just at one of such most unfortunate occasions: besides that, her little room was closed in so firmly and tightly, and their beds so carefully protected with two mosquito nets, that she and her husband were only rarely driven out. If conditions such as the present lasted for long, then of course they had to go up the river and stay with friends until the unpleasant creatures had taken their departure. To while away the time in this isolated and lonesome locality Mrs. McClintock had established one of the largest menageries of birds that I had ever seen. The yard and roof were regularly covered with glorious red *Ibis* in all shades of colour, with cranes, sunbirds, *Crax, Penelope, Psophia, Toa* and parrots, that smoothed their beautiful plumage in the morning sunshine, and after joining the throngs of their wild companions flying high overhead, would then turn home again after a while. One of her parrots, a *Psittacus pulverulentus* won my whole heart, for not only did it articulate distinctly, but also sang some English songs and whistled "Rule Britannia" in a masterly fashion. With the incoming flood we left our pleasant hostess but unpleasant house.

634. The mouth of the Pomeroon is situate 7° 36′ lat. N. and 58° 44′ long. W. and might be about three miles wide with a depth of 9 foot of water at ebb tide and 13 at the flood which somewhat higher up the river increases to 40 feet. The bed of the river consists of a muddy bottom. Its sides are flat and covered with the usual coastal vegetation for some miles up where the plantations commence: except for three plantain estates however, these are now completely abandoned. Here on the eastern bank stood formerly Fort New Zealand and the small market-town of New Middleburg both of which during the war in 1666 were destroyed by the English. After Emancipation a number of Blacks bought one of the abandoned estates and parcelled it out and so started the small Negro colony of Middleburg.

635. Several creeks fall into the Pomeroon on the western bank: the Waca-pau is the most important of these and is occupied by Arawaks. On the Aikoni is the Colonial Hospital for Lepers which has been shifted as far as possible from Georgetown to prevent contagion by every means;

a doctor and several attendants are in the service of the institution.* Plantation Caledonia that Mr. King had fixed for the night's camp showed up on the eastern shore immediately opposite the Aikoni mouth. We made our way there into the mile-long lined trench bordered with coconut palm, which led to the residential quarters and betrayed unmistakeable Dutch origin. The coffee fields shaded by the mighty *Erythrina Corallodendron* Linn. extended on both sides of the trench. The want of labourers was also apparent here, for the greater portion of the previously carefully cultivated estate was already overgrown with weed, the coffee bushes covered with vines, and the intervals filled with a real chaos of thorny *Mimosae*. The plantains which only with their crowns still overtopped the wanton growth, offered a similarly mournful aspect. How many drops of sweat must it have cost to bring this beautiful estate under cultivation originally! How much labour must have been spent on the extensive canals and trenches! And now the whole was but one thick tangle of *Mimosa* and *Cordia*.

636. The manager, a friend of Mr. King, welcomed us with the hospitality for which Guiana colonists are celebrated, but the mosquitoes on the contrary, received us with corresponding hostility, which they expressed during the night in equally sanguinary greed. Thanking God with all our hearts for break of day, we only breathed freely again when daylight poured into our quarters. At breakfast the manager mentioned amongst other things the case of a Negro girl on his estate suffering from a disease which I had heard something of in Georgetown, but had never had the opportunity of seeing. Our obliging host told me he was ready to take me to her. On stepping into the miserable room, I ought rather to say pitiful stable, a naked human form as emaciated as a skeleton rose from off a sack of straw spread in the corner, stared at us with hollow deeply-sunken eyes, and then stretched out her bony arms entreating us for help. An icy shudder ran through me and had I not been restrained by the respect due to our host, would have run away at first sight of her. The whole living skeleton was only covered by skin with many a broad fold in it, through which each rib, each bone, each knuckle, could be seen: it was the most horrible representative of a human figure I had ever seen, even elephantiasis and the yaws never having seemed so awful. With dry husky voice and a pathetic whine she asked for medicine: but help had come too late. To cool her temperature at least, for the unfortunate creature was burning with inward fever, I brought her the last of my stock of lemonade powder. The woeful picture of her sufferings impressed itself on my memory for long, and it was many days before it disappeared from my mind.†

---

* The present Leper Asylum is situated at Mahaica, on the East Coast of Demerara. The Hospital here mentioned on the Waca-pau Creek is, I think, the old "Yaws" Hospital. (F.G.R.)

† This description is of some interest, for it is a very accurate picture of an acute Pulmonary Tuberculosis, though he mentions no cough. I know of no other disease whose physical signs fit so well into the picture, though it is supposed, and the author himself affirms, that indigenous Tuberculosis was then unknown in the Colony. The emaciation, the dry husky voice, the sunken eyes and the inward fever all seem typical of the condition. It is a pity that we are not given the name by which the disease was known, or some more definitely localized symptoms. (F.G.R.)

637. With the commencing flood that on the coastland streams fixes departure as well as arrival, we left Caledonia and resumed our journey up the Pomeroon the bed of which continues to make its way between estates that once were flourishing but now are overgrown with weed. The vegetation in such places appeared so rank, so thick, and with it all so uniform in growth, that the whole had really a very regular appearance and it seemed as if these dark flats which of course were still far from reaching the height of the virgin forest, had been kept controlled and in order with hedge-shears. The Cinewyny, a small creek about 1½ miles above the Aikoni and upon the same bank, falls into the Pomeroon. Close to its mouth one of the Indians drew my attention to a tree upon which a family of eight sloths seemed to want to confirm the statement that this creature never leaves a tree until it has completely stripped it.

638. During the course of the day on the western bank we passed, in addition to that of the Wadaris, a number of other mouths of unimportant tributaries, as well as some small areas of cultivated land about an acre in extent, which the coloured people or Negroes had planted up, so as to pass their lives in *dolce far niente.* The Suriby and Harly-Piak were the most important affluents on the eastern bank. The once so celebrated estate ter Hooge, which naturally retained nothing beyond its name, had been established on the latter. Commencing ebb now forced us to look for camp which we soon discovered on the farm of a coloured man, a boat-builder. A large schooner freighted with truli leaves (*Manicaria saccifera*) for Georgetown, afforded us the opportunity of lightening our heavily laden corials and rendering them fit for the voyage to the Essequibo mouth. As the owner was quite willing to meet our wishes and take some of our baggage, we freed our boats of it, and then all the more cheerfully took possession of the farm parlour which the owner had hospitably given up for our use.

639. The thick border of *Caladium arborescens* enclosing the river-bed was the surest indication that the Pomeroon banks are still swampy here: the luxuriant growth of truli palm with its generally 25 to 30 ft. long, complete leaves four to six feet wide, sufficiently notified it besides. These leaves are the most suitable and lasting material for thatching houses and sheds. Formerly they were chiefly used for thatching the boiler-houses and megass-logies and constituted an important article of trade, a thousand of them at that time costing 50 dollars; however, as these buildings are now covered with shingles from the timber of the *Eperua falcata* Aubl. and *Pariroa grandiflora* Aubl., the Wallaba of the Colonists, the price has fallen to 20 dollars. The Indians who are mainly engaged in cutting them receive from four to six dollars per thousand, and at this price have to transport them to the riverside.

640. We resumed our journey next morning and soon reached the mouth of the some 100 to 120 yards broad Arapiacro on its eastern bank. A Mission Station* under the charge of Mr. Brett, the Missionary of

---

* The Mission was subsequently shifted further up the Pomeroon to Cabacaburi on its right bank where it still flourishes. (Ed.)

the Established Church, is situate on the point of land formed by the Arapiacro and Pomeroon, which now came from the southwest: the pretty little church is visited by the Caribs of the Pomeroon, the Arawaks of Tapacuma and Arapiacro, and the Negroes settled around the neighbourhood. Immediately opposite the mission upon the western bank of the Pomeroon is a charming house surrounded by a still more charming garden with ornamental plants and orange trees. It bears the name Pomeaco and belongs to a storekeeper, Mr. Pickersgill, who supplies the Europeans, coloured people, Negroes and Indians living on the river with everything that the isolation and distance from Georgetown denies the former, and that the stage of civilisation already won makes desirable for the latter: at the same time he carries on an extremely lucrative business in timber and truli leaves. After a short stay with the cultured trader whom I subsequently learnt to know more intimately and in whose company as well as in that of his sweet wife I spent many a pleasant hour, we said good-bye to him and the Pomeroon and made our way into the Arapiacro. The banks of this tributary are also swampy and liable to be flooded, but their vegetation, except for the palms, is very different from that of the main stream. Where at certain spots they were somewhat raised, we were faced by rapidly decaying elegant residences up to which some glorious avenues of *Cocos* and *Oreodoxa* that generally ended in thick columns of *Oleander, Hibiscus, Gardenia,* and Rose-bushes, were to be seen leading from the waterside. The builders had left their work behind but they themselves were gone. In the broad porch where once upon a time the rich Dutch owner, comfortably smoking his pipe, gazed in satisfaction upon the stream below, along which his harvest of sugar and coffee was being transported to Mother Ocean, and upon the flourishing rose-bushes that he had transplanted from Europe, as well as upon his thriving plantation beds, we now saw the sly face and dirty figure of a Negro, or the gloomy features of a coloured man who little worried that the huge posts were threatening to fall. It was only the flowers of the ornamental trees surrounding the beautiful ruins that still made a show in the same finery and same play of colour as they did in those times. Many of these buildings had been Orlean or Arnatto factories, but with the falling price of the article, the buildings also fell: for a pound of the pigment which formerly cost a dollar can now be bought for a twelfth of that amount, a bitt.*

641. After following the Arapiacro for a considerable distance to the south-east, we reached the mouth of the Tapacuma, and made our way in. The farther we went up the narrower it became, until finally the trees from both sides clasped arms like brothers and formed a thick leafy roof. At last an enormous dam with a lock of corresponding size, barred our further progress, and led us at the same time into the roomy dwelling of a friendly timber-getter who offered us the long wished-for camp. As we had got here after dark I was not a little astonished next morning to see, spread out at my feet, the smooth waters of a huge

---

* The local term for a fourpenny piece, or its equivalent value. (Ed.)

lake which in the far distance was bordered by dense virgin forest. To guard against the want of water in the dry season which is so prejudicial to the prosperity of the plantations, and also interrupts communication between the cane-fields and working-buildings, several estates' owners in 1829 made up their minds to change the savannah behind their lands where the Tapacuma rises, into a continually filled reservoir, and as it ran out into fairly high ridges, had no difficulty in carrying out their intention by means of the dam and lock. The water of the Tapacuma, thus blocked in its course to the Arapiacro, soon flooded the savannah and formed a lake, from which broad trenches with sluices lead in all directions to the estates which are greatly benefited thereby.

642. After dragging our corials over the dam, we made our way across the broad expanse of water which, except for the old strongly defined channel of the Tapacuma, was covered with innumerable *Nymphaea* that opened their beautiful blossoms with the early morning sunshine. The *Caladium arborescens* formed regular islands in between. But the brighter the flowery veil over the surface, the sadder seemed the frondless stems of *Mauritia flexuosa* and the leafless boughs of giant foliage trees which were to be noted everywhere about the lake. The constantly uniform height of the savannah water-level had even destroyed the giant palms that favour swamps—how much sooner therefore must it have killed the mighty foliage trees, the dried branches of which were thickly dotted with the nests of the ever garrulous Trupial (*Cassicus persicus* and *C. haemorrhus*). The busy pegging of a number of wood-peckers at the pithy and decaying thready layers of the *Mauritia*, together with the husky screech of several parrots (*Psittacus Makawuanna* Linn.) that had utilised as hatching-boxes the holes picked away by the former, and regarded us as enemies of their broods, was audible in the distance. The active life that had developed on the water in the way of countless flocks of duck, water-fowl, heron, etc., even harmonised with its fancy dress. The pretty *Parra Jacana* particularly presented an entertaining picture: it hurried on its way over the densely intricate *Nymphaea* leaves as quick as lightning, and as soon as we were recognised, uttered its peculiar warning note to draw the others' attention to the danger: the latter then anxiously stretched their lanky necks to spy in all directions whence the disturbance threatened. If one of these birds be suddenly surprised it nevertheless still utters its strange note to save others from a similar fate before seeking to save itself.

643. In the midst of all this busy life we reached, at the end of a long journey, the lock and lock-house at Plantation Richmond. When the lock-keeper, le Bréton, heard my name, the old boy got so terribly excited that I really thought he must be suffering from periodic mania: and yet this extraordinary behaviour was due to quite another reason. He was an old travelling-companion of my brother's and had accompanied him on his expedition to the sources of the Essequibo in 1837. As the passage through the lock necessitated some delay, le Bréton regretted his inability to invite us in the meantime to his little house, because unfortunately it had been taken possession of by some troublesome company which, having made a surprise attack that morning, had

even driven him, the house-master, out of it. Made inquisitive by the information, we hastened to have a look and found that an innumerable host of wandering ants had taken up their quarters there. The whole room was hung as with a blackish-brown moving cloth while densely-clustered clumps of already settled individuals formed as it were the capitals that supported this living drapery. The floor was so thickly covered with the creatures busily running about that when le Bréton wanted to fetch us a little luncheon out of his larder, two of our people had to use a broom to open up a trench through the swarms of besiegers. The original residential site of these curious insects had so far not been ascertained for certain. For the rest, their presence brings the estates profit rather than loss because they do not damage the plants but on the contrary destroy all other insects, even large amphibia, that they come across. They emerge from the virgin forest in one endless train and just as suddenly disappear in it again. Their invariable motto is "Straight ahead." Pressed closely together, these processions move along and do not allow themselves to be forced aside by any obstacle that steps in their way. The two flanks of the column are invariably escorted by powerful and courageous warriors always ready for a fight, and every insect, every reptile or smaller mammal that cannot escape the latter by the most rapid flight, is absolutely doomed to destruction. The many skeletons lying bleached in the sun indicate to the subsequent wayfarer the passage of such a host. When a house is reached it is quickly filled to overflowing with the busily inquisitive creatures, and the day of reckoning fixed for every spider and other insect that has up to now enjoyed a comfortable rest in its safe little corner. When evening sets in they lump themselves up into thick clusters like swarming bees, which at break of day unloosen, when, hurrying off through door and window, the raiders resume their road to robbery. Though the presence of these ants was very annoying to honest le Bréton and particularly so to-day, he was nevertheless very glad that his house had been once more radically cleared of all other troublesome guests and fellow inmates.

644. After getting our corials over the lock we made our way through the as yet uncultivated portion of the estate until we soon reached the cane-fields and a glorious avenue of orange trees that stretched along both sides of the broad dam. Though overladen indeed with golden-yellow fruit, they were unfortunately regularly smothered with the destructive parasite, *Loranthus uniflorus* Linn.

645. Mr. Pearson, the manager, received us most heartily, and in spite of our protests, especially mine and Hancock's on account of our bandaged feet and more than rough clothes, introduced us into the numerous circle of a brilliant company where we, whom they had long mourned as dead, were welcomed with general sympathy. Some imaginative Indian had spread the news particularly along the coast that the whole expedition had been wiped out by Spaniards, and that Mr. King had already had his head blown off with a cannon-ball.

CHAPTER VI.

Mouth of the Essequibo—Islands at the Mouth—Bartika Grove—Mouth of the Mazaruni—Kyk-over-all Island—Penal Settlement—Cuyuni—Carib Settlement Kai-tan—Old Dutch mining claims—Divine Service at Bartika Grove—Arrival of my brother at the Mission—Results of his journey—Return to Georgetown—Fort Island—Yellow Fever—Plantation L'Heureuse Aventure—The Police Chase.

646. On the following morning, after getting our corials over the front dam which protects the estates from encroachments of the sea, and saying good-bye to Fr. Cullen, his brother and the Catechist, who left us here to reach Georgetown by the shortest route, we voyaged along the Arabian Coast to the mouth of the Essequibo. This stretch of land is undoubtedly the most important and fertile area of the Colony, it alone including 37 sugar estates and several large farms besides. As the plantation owners take the greatest possible pride in the height of their boiler-house chimneys, these stacks rose far above the flourishing natural wealth of the South, the dense border of coastal vegetation, and lent quite a peculiar character to the view. The bustle going on in the machinery sheds was betrayed by the dense black whirling columns of smoke which, under pressure of the atmosphere spread out over the landscape in dark streaks and became ever lighter and lighter in the distance until they were finally blurred in the haze. What increased the charm of the picture still more was the sunset casting its gilded rays over the lightly ruffled ocean and wealth of panorama. The favourable impression of the sea view was further heightened by the mighty Essequibo, for though the mouth of this river was yet several miles away, one could nevertheless recognise from now onwards the huge waves of the stream rolling on into the sea, and without mingling with its waters, stretch away out into the Atlantic like a dirty streak. The picture became even more vivid and impressive when the flood-tide set in and two mighty volumes of water put their uncontrolled forces to a test that resulted in indescribably violent commotion. The proud stream however proved its mettle because the penetrating energy of the flood was soon overpowered, the foam-belaboured waves and eddying circles abated, and the arrogant streak of victorious current reappeared before our gaze, to lose itself again in the far distance on the horizon. This sublime sight was not even without effect on the Negroes who were otherwise so insensible to the beauties of Nature, and called from them a general expression of astonishment.

647. Midnight again drew near without our having reached Plantation Aurora, the place fixed for camp, and our Blacks were once more about to express signs of dissatisfaction when Mr. King quite casually remarked that they must have forgotten there was a prison close by where he would have every man jack of them locked up for a few days.* Any prospective disturbance of the peace had been thus just

---

* The prison referred to is at Capoey but now devoted to other purposes, Court House, Police-barracks etc. (Ed.)

nipped in the bud, when a loud barking indicated that we had reached our destination. The manager and his people were already slumbering so soundly that it was only with the assistance of the watchman that we succeeded in waking them. Although he was a complete stranger, Mr. King's friend having given up the management some weeks before, he welcomed us just as heartily as anyone could possibly have done, and drove Mr. and Mrs. cook out of bed to prepare supper for us. Without noticing it in the darkness we had entered the Essequibo mouth just as ignorantly as we had passed the Capouye which falls into it on its western bank. This latter river forms part of an irrigation scheme similar to that of the Tapacuma where, six miles inland in the neighbourhood of these former savannahs, it spreads itself out into an immense lake, surrounded by forest. It is about 1½ miles in circumference, and is stated to be unfathomable: among the Colonists and Indians living in the neighbourhood there is a saying that a terrible noise similar to that of a cannonade used formerly to be heard within it from time to time.*

648. Next morning quickly took us into the channel between Tiger Island and the western bank, along which we now continued our journey up the Essequibo as far as Plantation Sophienburg situate at the southern spit of the Island. We stopped some time here at a storekeeper's to purchase the provisions that I was anxious to despatch up the Cuyuni to my brother. After concluding the business and saying goodbye to Mr. King who, with the black crew, Caberalli and Maicerwari proposed travelling from here to Georgetown, I continued my way up stream in company with Hancock, Stöckle, Florenz and three coloured men. As Wakenaam lay exactly opposite I could not refrain from paying the kind-hearted proprietress of Zeelandia a hurried surprise visit. A strong north wind suddenly arising proved unfavourable for the trip and almost made me regret my purpose, for the waves rolled high enough to have done credit to the Bay of Biscay: however, we fortunately reached the estate, but were not to see either Mr. or Mrs. Arindell who were still in Georgetown. Our white-haired captain soon made a sail out of an old piece of sail-cloth that the manager readily sold us. On the morning following, what with a good wind and the commencing flood, we shot over the angry waves with the speed of an arrow and soon passed the eastern point of Parrot Island and a whole row of other ones, the flourishing vegetation of which made a fine sight. I recognised the major portion of von Meyer's Flora Essequiboensis, amongst which the *Vochysia*, the *Cassia* enveloped in yellow flowers, and the *Jacaranda*, ofttimes leafless but dotted over with blue blossoms, were especially conspicuous: owing to the alternating mixture of colour and the way

---

* This is quite probably founded on fact as there is a little creek in the vicinity of Waini mouth and a tributary to that river called Thunder Creek from the fact that loud explosions are heard in the neighbourhood. I have heard them myself on several occasions while surveying oil concessions. Mr. Ernest Farnum a couple of years ago had the vicinity examined in the hope of locating the supposed pitch volcano, the probable cause of the noise, but did not succeed. Again a couple of years ago when at Aruau Mouth in the upper Aruka I heard a terrific report in a northerly direction and when that evening I arrived at the Aruka Estate the manager Mr. P. C. Pierre told me the explosion occurred in the vicinity of the Barabina Hill right behind the plantation. (V.R.)

in which these trees were interlaced with thousands upon thousands of bush-rope and creeper, the scenery proved most beautiful.

649. We had arranged to get to-day as far as the so-called Cliff, the first spot on the western bank where granite rock is to be seen. There is a fairly large farm in its immediate vicinity. The day was already drawing to a close as we approached when the silence was suddenly broken by the most heart-rending cries of pain in a woman's voice, proceeding from the owner's residence. Upset by the sound, we tied our corial to the stelling and, hurrying up, met the proprietor who, with a sad face, quietly led us into a pleasant room on the upper storey. We found a young girl here writhing in strong convulsions and uttering those cries of distress which had made us shudder even at a distance. Her night-dress as well as the white coverlet of the bed were deeply stained with blood. Dismayed and grievously shocked, Hancock and I stood several minutes speechless in front of the couch till the voice of our host wakened us from our stupor. "Look at my dear sister," he told us, "she only came from Holland a few weeks ago to cheer up my lonesome existence in this far-away country, and now she must leave me for ever!" The poor 18-year old young woman had been attacked the day before with a virulent complaint which the Colonists call "dry belly-ache," an extremely dangerous inflammation of the bowels, to which almost all who are afflicted fall a sacrifice.* The setting sun that shed its parting rays over the clean bed covered with spots of blood, and upon the withered cheeks of the pretty young face, as well as over the trembling and sympathetic features of an aged half-naked Negress who was trying to restrain and encourage the patient, shewed in its mellow light such fearful contrasts as to make us feel most terribly horrified. Believing it to be a fever on account of the terribly raised temperature, the disconsolate brother had hoped to relieve the sufferer by opening a vein, but the dressings, not being properly secured, had become unloosened and the wound was bleeding afresh. Hancock, who had formerly studied medicine, lost no time in approaching the bedside and with a bandage skilfully applied, succeeded in stopping the severe hemorrhage. The increased noise in the room may have caused the sick woman to suspect the arrival of strangers: at any rate she suddenly opened her hitherto closed eyelids and, without a movement on her pale lips, turned her large black eyes upon us for a long while in surprise, when her brother, who probably surmised in Hancock's dexterous manipulations the presence of a doctor, bent over and tried to comfort her with the assurance that help was now at hand. The calm look of hope with which she regarded Hancock and her soft expression of gratitude were suddenly interrupted again with the most terrible cramps and piercing cries of agony. We could bear this shocking scene no longer but, deeply affected, left the chamber of suffering and made our way down again to

---

* This "dry belly-ache" was most likely Pernicious Malaria. Even now these cases are seen occasionally in the Colonial Hospital, running a rapid and acute course, with chiefly intestinal symptoms. It may, of course, have been Cholera, which appeared in Guiana in 1832-33, though one would have expected so well-informed a writer to be acquainted with this disease. The "cramps" are very suggestive. (F.G.R.)

the door, past which soft-hearted Stöckle hurried with eyes bathed in tears. Everything that our medicine-chest contained in the way of anti-spasmodics was immediately handed over to the Negress who had followed us, and her brother brought us news shortly after that the distressed patient had fallen asleep. He had already sent a messenger yesterday to Wakenaam for the doctor, but up till now the latter had not put in an appearance. Salutary sleep was unfortunately soon to be denied her, and the cries of pain echoing afresh throughout the silent house were continued with but few interruptions throughout the whole of the night. When next morning we stepped up into her bedroom we thought we already recognised the presence of that surest cure for all our sufferings, the Messenger of Peace. As it was the eastern bank of the river that we followed on the return journey, I was unfortunately never able to learn what ultimately happened to the patient.

650. Very deeply affected, it was in silence that we continued on our journey up the glorious Essequibo along which we were wafted with the fresh early morning breeze. Now that the river was free of islands its remote eastern shore glittered at us occasionally through the gradually unfolding clouds of haze like a bluish band fringing the rays of sunrise that came into view with its golden edge. Sometimes we neared the densely forested western bank where thousands upon thousands of feathered residents chimed their happy voices unmindful of our sorrow: sometimes we drew away and returned to the middle of the stream. A dear little cottage surrounded by countless cacao trees with their yellow fruit and small dainty blossoms conspicuous amidst the pretty foliage seductively invited us in the evening to sling our hammocks under its roof which its owner, a coloured man, readily agreed to. While taking our black coffee in the morning our host asked us to wait a while because although not possessing goats or cows he knew where to get some milk. He soon returned with a basketful of beautiful ripe Sawari nuts, the fruit of the *Pekea tuberculosa* Aubl. (*Caryocar tomentosum* Willd.), broke the kernels out of their shells, pounded them in a vessel and poured the expressed fatty white juice into the dark brown liquid which now bore comparison with the morning coffee of Europeans mixed with the fattest of cream. The sensible fellow did not teach us the little piece of magic in vain, because this vegetable milk has often coloured our coffee since, and made it tasty.

651. The awakened screech, after sunrise, of the streams of parrots flying away over the stream also warned us that it was time to get away if we still wanted to reach Bartika Grove before sunset. We only succeeded in doing so after dark when the friendly Bernau put at our disposal a pretty empty house situate close to a steep descent on the nine to ten foot high bank. Two mornings later I was able to hand over a corial plentifully laden with provisions to our old captain to take up the Cuyuni and look out for the Expedition. Circumstances also rendered it possible for me to apply regular and suitable treatment to my feet, the condition of which put every prospective excursion out of the question. Its salutary effects soon rendered themselves apparent and when the continuous rain did not keep us back I was enabled to make small daily

trips inland and upstream in company with Hancock, Stöckle, and Florenz: it was usually then that I particularly enriched my botanical collections and filled any gaps caused by the rain and moisture.

652. Although Meyer in his Flora Essequiboensis alone describes 366 genera and species, and Aublet enumerates a considerable number of others, I nevertheless discovered a quantity of plants that were described neither by the one nor the other. The richer however my botanical harvest, the poorer did the zoological prove to be: even all the oft-repeated efforts to increase my ichthyological collection were blocked by the high level of the water when no other fish than the *Crenicichla lugubris* Heckel., can be enticed to take a bait. On returning out of humour of an evening from my fruitless fishing, I would try and forget my annoyance in the really beautiful enchanting landscape over the wide stretch of the Essequibo which, with its slow almost imperceptible current, was rolling along to the ocean. If the gradual advance of the stream were not noticeable, by the floating trees uprooted in the upper reaches through the raging force of its current, anyone would take this huge mass of water for a tranquil lake. Even the momentary stir and blocking of the waters when the flood sets in would pass unnoticed were it not that the tongue of land on which Bartika Grove is situate had been so washed away already that Mr. Bernau had been forced to put up a fascine dam. At high flood the rise generally measures seven to eight feet, at the spring on the other hand, usually ten to twelve, when the water will overflow the banks in many places. I cannot explain the tempestuous violence with which the Essequibo rushes into the sea. Bartika Grove is situate in 6° 24′ 24″ lat. N. and 58° 37′ 44″ long. W.

653. From the observations made directly after our arrival in connexion with the temperature of the water as compared with that of the air, it was found that the former at 6 a.m. was usually from 8 to 10 degrees warmer than the latter, at 2 p.m. on the contrary the air was 1 to 2 degrees warmer than the water, while at 6 p.m. the water was again 2 to 3 degrees higher than the air. This considerable difference between the two temperatures at sunrise is the reason why the thick masses of mist that develop every morning on the surface of the water are generally dispelled only several hours later when the increasing warmth of the sun has re-established the balance in temperature. All the data subsequently obtained by us strictly corresponded with these results.

654. After having explored the immediate neighbourhood as far as we could, we turned the bow of our corial towards Kyk-over-all, the small island at the Mazaruni mouth. Here are to be found the ruins of a small Fort from which one can enjoy an unrestricted view over the streams of three rivers, the Essequibo, Cuyuni, and Mazaruni, and hence its name. The original Fort, built of hewn stone, which was already in ruins on the arrival of the Dutch, was built by the Portuguese as may be seen from their coat of-arms over the entrance.

655. A short time after the Hollanders had been driven from the Essequibo by the Spaniards with the assistance of the Indians, in 1596, a certain Jost van der Hooge returned to found the colony of Nova Zeelandia. Already fully established in 1613 it was protected by a

small Fort which the new promoter met there and subsequently received the name of Kyk-over-all. In 1764 the defence works were partly demolished and the sugar-mill of Plantation Duinenburg built out of its hewn stones, while some years later, in 1768, they had to supply material for the mill at Plantation Luiksbergen: nevertheless it was not razed to the ground. As I was once again so close to Cartabo Point I could not refrain from continuing my trip and paying it a visit when I was immediately recognised by the residents and given a hearty welcome: the women enquired after husbands or sons, about whom I could naturally give them no further information than that it was to be hoped they would soon be safely coming down the Cuyuni with my brother.

656. While paddling one day with a small coloured boy along Naikuripa Island, which lies immediately opposite Bartika Grove, I heard the piping note of a sloth which the sharp eyes of my young and smart companion soon discovered in the top of a tree. Without waiting for my instructions the clever climber clambered up and reached the animal: he vainly tried to loosen its hold, and to gain possession of the creature, had to lop it off the tree with a hatchet. It was a female with its young that was clinging tightly on to her back. Their appearance on the island doubtless indicated that they not only undertake long journeys, but that they must also be expert swimmers, for otherwise the mother would never have reached the island lying tolerably far from the bank. My young friend told me that he had found plenty of sloths on the islands of the Essequibo. After killing both, which I only succeeded in doing after a great deal of trouble, I stuck them into a cask of spirits to be forwarded to Berlin for making into skeletons.

657. An excursion to Kai-tan, a Carib settlement on the Cuyuni, was at last to satisfy my desire of becoming acquainted with this race, so feared in earlier times, and the accounts of whose brutality had made me shudder while still a boy. At the Cuyuni mouth is to be seen the former residence of the Postholder which now, deserted and abandoned, looked sadly down upon us from its 50ft. high granite rock. The hope of finding from there an unrestricted panorama over the Essequibo, Mazaruni, and Cuyuni induced me to climb the dismal and formidable rocky massif of the bank, when the reality that presented itself far surpassed my expectations. The station had been removed to Ampa a long while before and people were just then engaged in completely demolishing the house that was fast going to ruin, and establishing in its place a penal institution for the convicts of the Colony. The system of punishment hitherto in vogue had turned out to be of so little efficacy especially in the case of Negroes, and at the same time had proved so expensive that the Government had decided upon another procedure which, it was to be hoped, would remedy both evils. The immense quantity of granite offered an inexhaustible field for convict labour, for the prisoners could obtain from it the stone required for street-paving, house-building, etc., in Georgetown, and at the same time cultivate the broad unused stretches of land for their support. The hopes that were set upon the change have been completely fulfilled; the sentence of a punishment of several months or weeks in the Penal Establishment at Maza-

runi fills every Negro with terror because he is made to work there. The Pennsylvania system would at all events in the case of the lazy Negro drag after it none of the dismal consequences which it has undeniably entailed in North America but, as is generally the case, would rather miss than attain the special object of the punishment.

658. The Cuyuni at its mouth consists of fairly high clay banks which are here and there interrupted by masses of granite between which the muddy water of the current slowly makes its way. The Carib settlement soon rose ahead of us, the houses corresponding almost entirely in their construction with those of the other tribes whom we had hitherto visited. But the occupants seen here differed essentially in their whole outward appearance from the latter, not only in the darker colour of their skins, but also in their more thick-set and robust build of body and coarse hardly prepossessing features. The few men and women whom I found present were indeed not tattooed but on the other hand painted out of all proportion with Rucu and the dark blue juice of *Genipa americana*, in the most varied angular patterns which particularly appeared most numerous on the legs. In the pierced ear-lobes they wore pieces of bambu or jaguar teeth: in the pierced under-lip and at both corners of the mouth, several needles which, stuck from inside out, at the same time for the women formed a keen bulwark against any illicit freedom. Instead of the apron belts being made out of beads or tree bark, the women wore a covering of "salempores" reaching down to the middle of the thigh, the shape of which much resembled our bathing pants. To give unnatural girth to the calves, which amongst them is regarded as the greatest female perfection, 3-inch wide cotton bands are tied on the girls already in their earliest childhood both immediately below the knee as well as above the ankle. The girl wears these fetters unaltered until she reaches full development. By this means the muscular growth becomes limited beneath the spaces that are tied, while the calves swell to an ungainly mass of muscle. The women wore their hair cut short immediately over the forehead while that of the rest of the head fell, disordered and tangled, over the shoulders, or in some cases was tied up in a bunch on top of the head. As soon as I entered the village it was evident that their whole character corresponded just as little with that of the tribes already known to me. The men were at the time busy finishing some paddles and the women making earthenware. After scarcely vouchsafing us a haughty almost contemptuous look, they turned their sulky eyes back on their work, which they silently resumed without taking any further notice of us. We had been standing alongside them for some while without getting a syllable in reply to our questions when Hancock hit upon an expedient that formed the most exquisite master-key for opening the closed doors of their mouths. Without bothering further about them he turned round specially to Stöckle, and asked him to fetch the spirit-flask, as he had a powerful thirst on, and wanted to pour some of its contents into the water as was generally advised by doctors in general when drinking river-water. Hardly had the word "brandy" reached the ears of the company apparently absorbed in their work, than as if by magic all heads

were raised, all tongues were loosened, and all eyes beamed friendship, while heart and hand showed themselves prepared for any service. I admit that I was not very much taken with this want of character, this sudden change from their previous offensive and arrogant behaviour: it formed too glaring a contrast with the complaisant friendliness and gentleness of the remaining tribes with whom I at any rate might have been too favourably impressed. What had disgusted me about them had spread fright and terror among the aboriginal natives from time immemorial. The Caribs formerly undertook frequent predatory expeditions into the interior of the country and sold the resulting prisoners as slaves to the Dutch or English. The most beautiful of the women and girls captured by them on these raids they retained for themselves and thus one might clearly explain the observation of earlier travellers that the women of the Caribs spoke a language quite different from that of the men. Not only amongst themselves but also amongst remaining tribes there has been maintained a tradition that the Caribs wandered into Guiana and that their ancestors inhabited the Islands. As I subsequently spent a long time with them, and became better acquainted with their manners and customs, I propose postponing any further accounts until the description of my stay. With regard to accentuation, as well as in the whole structure of the language, I found a remarkable correspondence, even in particular words, with that of the Waikas or Akawais who in general appear to be a branch tribe of theirs.

659. The clay pots which we saw the women busily employed manufacturing constitute one of their best articles of trade. Although suitable clay is to be found in almost all the small streams of the coastal region, certain localities are specially notable for the excellence of their material. To such as these belongs the base of a small hill on the left bank of the Cuyuni mouth to which Indians come from distances far apart to obtain their requirements. A religious superstition is the cause of numerous parties assembling here to collect it: the Indians firmly believe that it is only during the first night of commencing full moon when they dare carry on the work, and accordingly, as Mr. Bernau maintained, whole crowds congregate there on that particular evening and return home at break of day with a big supply. The Indians are absolutely convinced that the pots made from clay obtained at any other time not only possess the defect of readily breaking, but also bring a number of diseases to those who eat out of them. In the manufacture of the ware the Caribs do not vary from the procedure of other tribes. After the clay has been kneaded with hands and feet until such time as no more little particles are to be seen in the pliant mass, they first of all construct the base of the vessel, and then with the flattened hands prepare rolls of clay as thick as one's finger: they join these to one another both by pressing them over with a little piece of wood that is always kept wet, as well as by manipulating them. By squeezing together, or by spreading out the mass, they know how to give the most varied shapes to the vessel. When the clay has lost part of its moisture, they polish the outside with a smooth stone or a shell and sun-dry the article for some time. To bake the ware they dig holes in the ground, put the pots in them, surround

the same with pyramids of dried timber, light them, and keep the fires burning until the process is completed: they know when this stage is reached by the sound of the note which such a pot gives when tapped with a small piece of wood. The painting of this ware, which is only carried out after the baking, is done either with a piece of wood or without further help than the finger. They are the only tribe whose painting shows bent and circularly curved lines besides the straight ones. The soot from pots already used, which they scrape off and mix with the gummy-like slimy juice found between the bast and sapwood of the *Inga*, supplies them with the black paint: the *Bixa Orellana* or *Bignonia chica* supplies them with the red. I have seen vessels which held certainly from 30 to 40 gallons and on account of their fragile nature, were tightly wound with fibre.

660. Mr. Bernau having informed me that several old claims, the scanty remains of earlier mining, were to be found somewhat to the westward of Kai-tan, I went to have a look at them, and discovered, besides the workings, a number of pits fallen in and overgrown with underwood. The old legend about the mountains of Guiana rich with gold and silver had induced the Dutch in 1721 to allow everybody to dig for the precious metals anywhere within the country. As this muddling way of mining produced no favourable result, and not wishing to sacrifice their illusory hopes that Guiana was hiding within herself the same wealth of desired metal as the western portion of South America, they got a mining expert by the name of Hillebrand, together with several miners to come out from Europe so as to unearth the precious substance with the assistance of an experienced man. But the workmanlike methods of mining still proved no more successful than did the previous empirical ones. The labourers succumbed to the influence of the climate before they could even reach their destination: the work had to be left undone and has never been resumed. The stone that lay around in the immediate neighbourhood of the claims consisted partly of weathered granite, and partly of gneiss with plenty of mica and horn-blende as is ordinarily met with on its transition stage to trap-stone. I wondered at seeing several huge quartz boulders which nevertheless could not have had their mother rock here, but were probably derived from a lode in the Cuyuni.

661. I found a useful and diligent troop of helpers in the boys of the Mission station who enriched my collections with many an insect caught during their trips in the forest, to which they hurried with their miniature bows and arrows at the commencement of every leisure hour. When the longed-for time arrived the greatest activity was displayed in the pretty little settlement. Shouting and jumping along, one lot of strong, healthy lads hastened to the forest, another on the contrary trooped down to the bank of the Essequibo and launched their tiny home-made schooners or bark canoes for which they had taken the vessels coming up stream as models, while yet another took their way to the field with hoe and spade to clean the yams, etc., from weeds or to loosen the soil until the blare of a trumpet called them back to the school-room. As the Mission boasted no clock their trumpet at the same time announced

the times for prayers and called the people to Sunday services, which always caused a certain amount of excitement in the peaceful well-regulated Mission and lent it an unusually gay appearance. Already by sunrise a number of corials and boats could be seen on the Essequibo and Mazaruni hurrying to the Mission with clean-clothed coloured folk, Negroes, and neighbouring Arawaks, and soon reaching the landing-stage, brought the devout worshippers to church. Subdued and still, the attentive congregation sat and listened in the hall of prayer to the simple child-like sermon of their brave shepherd. I shall never forget how deeply impressed I was with the singing of the Mission community, particularly of the boys and girls, which was as soft as it was inspiring and spirited. Mr. Bernau took the afternoon service in the Arawak language. Sunday being Life's flower-stage, Saturday already disclosed the buds: for in the morning many of the boys, many of the girls, were to see their parents, their brothers and sisters, or relatives. Sunrise had not yet proclaimed the Sabbath morn before the children, filled with a presentiment of delight at seeing their own people again, searched the smooth waters in the direction whence those they longed for had to come, and if a corial came into view, their sharp eyes would recognise in the remote distance those whom they expected. The Indians have been repeatedly reproached for loveless sentiments and want of sympathy towards their children: yet the conceited look of the father and inward joy of the mother whose gaze complacently rested upon the daintily dressed boy or girl expressed the surest signs of paternal pride and purest maternal love. The parents never forgot to bring some tit-bit or other for their own pets, and the well-filled basket would be readily opened and faithfully shared so as to cheer the sad and depressed looks of the poor orphans who had no father or mother to care for them. If the parents of children staying at the Mission brought a younger brother or sister with them, the big black eyes of the naked little savage would look covetously upon its brother's or other pupil's clean clothes, and gaze in wonder upon all the neat dwellings, yet one could plainly read in its looks what it felt in its heart: "It's all very nice here—but it is far nicer in our forests: now and never would I change with you!" I managed to watch the young Mission pupils all day long and noted with what childish pride they showed their little brothers and sisters all the sights of the Institution and, leading them into the dormitory and schoolroom, tried to give explanations for everything. The coloured people and Negroes left the Station directly service was over: many of the Indians followed them only next morning.

662. After Hancock and I had settled down to rest one evening we were aroused from sleep by a loud knocking at the door, and there stood Mr. Glascott who we naturally thought was about to announce my brother's arrival—but we were mistaken. After our leaving the latter with his division his captain had been suddenly taken seriously ill and as the Indians maintained that onwards from Manari where the overland trip was to commence, the Expedition would be beset with a number of difficulties, it was decided that Mr. Glascott, one of the worst walkers of the party, the sick captain, and the unnecessary chronometers that might

very easily get damaged on the land journey, be sent back to Georgetown along the same route that we had come. To keep us company while waiting for the Expedition Mr. Glascott had just come from town, but unfortunately brought very unpleasant news. Yellow fever and smallpox were still raging to a frightful extent, the former amongst the 52nd Regiment that had only arrived a short while before, the latter especially among the coloured people and Negroes.

663. I was beginning to get seriously anxious over the long absence of those whom we were waiting, when on the 26th July our small mortar announced their coming, soon after which we welcomed them at the stelling.

664. After leaving Manari on the 8th July, they had travelled up the Barima in company with our Warraus and Waikas and had then left it to look out for a path that led to the Cuyuni. My brother and his companions had pushed their way on over hills 50 and 60 feet high and through intervening swampy valleys where the water often reached up to their waists when they finally crossed the Caruawa which seemed to be only a small stream here, and soon after struck upon a settlement of Waikas. On the second morning out, my brother was unfortunately forced to admit that his height-barometer had suffered considerably already on this short overland journey and was unsuitable for making any further observations.

665. The cleanliness found in Paripu, the Waika settlement, and the neat and natty picture exhibited in all the villagers' fields supplied unmistakeable evidence that it was ruled by a man who must have spent a long time in Georgetown and there got imbued with a taste for European manners and customs: unfortunately, he and the largest portion of the residents were away. After passing a second settlement in the course of the afternoon they reached the valley of the Parapimoi, the overflowing flood-waters of which had transformed the whole plain into a lake that had to be waded across. With the Carib settlement of Cariacu they got by evening to the Barama which was some 60 yards wide and falls into the Waini about 40 miles away. Its banks are occupied by Waikas, Caribs and Warraus who together might form a population of 500 individuals. As several of the men hitherto accompanying him expressed their unwillingness to proceed farther, my brother picked some Caribs and Waikas from the neighbourhood to fill the gap. Owing to the want of another boat they had to content themselves with woodskins for the voyage that was to start from here. The Indians manufacture these light and frail vessels just from the bark of thick trees: I only learnt subsequently the special procedure adopted in their making. Owing to their light material they can be carried on the head to any spot along the bank where the river-bed opposes a passage until such time as the stream is once more clear and allows them to resume their journey. The upper portions of the river can almost always only be navigated by these craft.

666. Taking his departure from Cariacu on the 11th July, my brother, at a spot above the mouth of the Abocottë, met with the first rocks to appear in the Barama and soon arrived at the mouths of the Erawanta and Mazuwini. On the afternoon of the 13th July they

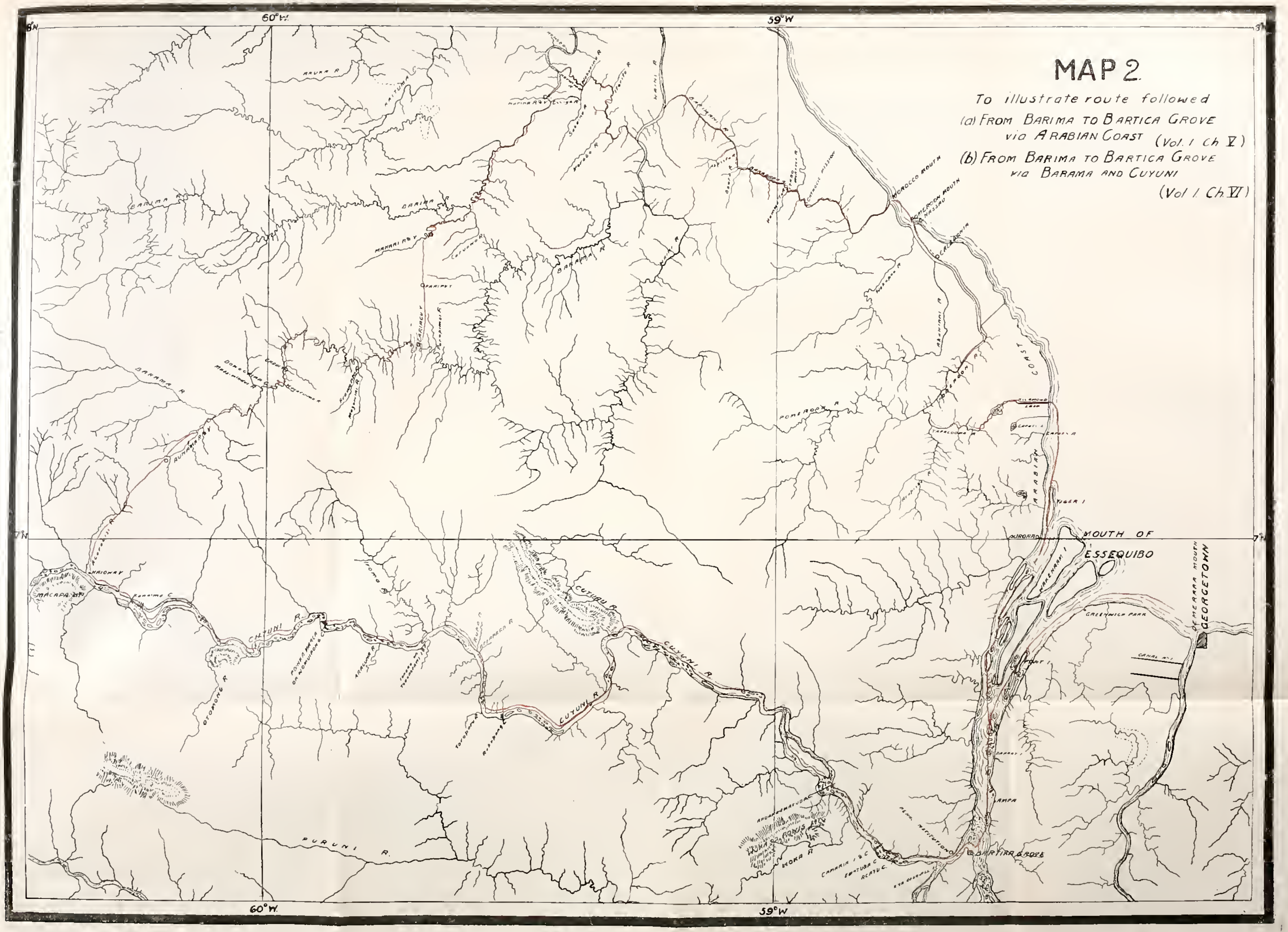
reached the first of the Barama rapids arising from several granite dams that had pushed their way across its bed. Although the Waika settlement Cadui, which was reached on the same day, lay 12 miles below the great Dowocaima Fall, they nevertheless during the night distinctly heard the thundering rush of its waters. My brother having again hired some Indians to accompany him to the Cuyuni, they made their way to the Great Fall that had already notified itself in the far distance by several rapids. They landed at Wayaruima Island and were forced to carry baggage and boats more than two miles overland. The total drop of the Barama from Cadui to the bottom of Dowocaima amounted to 120 feet. Shortly before the three uppermost falls the river becomes narrowed to 80 feet through the projecting masses of gneiss and then rushes down with frightful force in three drops, each of a perpendicular height of from 35 to 40 feet. The lay of the beds of gneiss runs S. 33° W. Next day they passed Massiwindui Rapids as well as others of less importance, and pitched camp in the evening at the foot of Aunama Falls where the path branched off to the Cuyuni. The river Aunama joins the Barama immediately above the Falls: its mouth is in 7° 13′ lat. N. The Barama is said to take its rise in the same parallel of latitude as the Barima and Amacura, in fact, in the savannah extending to the northward from the Ekruyéku Range.

667. On the 16th July they commenced their land journey afresh, traversed several hills of from 100 to 150 feet in height and then followed the valley through which the Aunama comes flowing into the Barama. After a short rest in some of the Indians' houses deserted by their occupants they resumed their way along the Aunama and by evening made the Carib village of the same name situate 7° 9′ lat. N. Upon and almost throughout the ridge of hills stretching from N. by W. towards S. by E. which they had traversed during the day they found big rows of erratic granite boulders which in general ran NW. by W. On the following morning they proceeded in the direction hitherto followed towards WSW., crossed the Aunama during the forenoon, and after traversing a small range of hills that extended S. by W. hit the westerly arm of the Aunama on the farther side of which runs the watershed between the Cuyuni and Barama, for, from this point onwards all the waters stream no longer eastward to the Barama and Waini but southward to the Cuyuni and Essequibo. From this 520 ft. high range of hills the ground sloped gently down towards the Cuyuni. The hills stretching farther westward, between the valleys of the Aunama and Acarabisi, hardly attained a height of 100 feet and as the length of the portage does not amount to quite two miles a cutting would form one of the most convenient means of communication between the Pomeroon and Morocco coast and the upper Cuyuni. By nightfall they arrived at a Carib settlement situate in 7° 4′ lat. N. that lay about 510 feet above sea level. The pathway through the valley of the Acarabisi down which they climbed next morning was very irksome, for they found here an uninterrupted series of swamps and had to wade through these boggy areas under continuous showers of rain. On 13th July they made the Carib settlement Haiowa which was only but two miles distant from the waters of the Cuyuni. The same fertility that fringed the banks of

the Barama was likewise displayed on those of the Cuyuni, judging from the sugar-cane that grew 15 feet long with a girth of 7½ inches. Haiowa was situate in 6° 55′ lat. N. and 60° 27. long. W., and 260 feet above sea-level. Although it was here that they had hoped to meet the corial sent up by me, it had not yet reached up to the 22nd July, which forced them to embark on the Cuyuni in one that they chartered there. Huge ranges rose to the westward of the Acarabisi and the summits of Ekruyéku already attained a height of 2,000 feet above the 4 to 500ft. broad level of the Cuyuni, the bed of which was filled to overflowing. The Macapa Mountains loomed up about a mile inland to the westward of the Cuyuni. Carried away down at tiptop speed by the augmented current they passed Kanaima Cataract by afternoon. The numerous islands were generally covered with *Quassia amara* bush, or Bitter-Ash, the properties of which the Negro Gramman (*i.e.* Grand man) Quacy, after whom it receives its name, discovered in 1730. A striking meteorological phenomenon presented itself to the notice of the company in that every morning at sunrise a strong wind developed in a direction opposite that of the stream: it gradually veered round to ESE. or E. by S. Where the river was free from islands and cataracts it usually had a width of 600 yards. On the farther side of the Otomong mountains they met with an almost continuous series of rapids and cataracts until they got to Poinkamarca, or Wonnipong of the Caribs, where, with a perpendicular fall of 30 feet they had to discharge the corial and drag it along the bank. A lonely house that was shared by a Waika, his wife and his dog, afforded them at night a little protection from the rain. Not far from this hut, which was situate in 6° 46′ lat. N., the Aracuna joined with the Cuyuni: a path leads from it to the Puruni which flows into the Mazaruni. The granite and gneiss-beds extending almost without a break from the Macapa Mountains* to the mountains of Aracuna, a distance of from 50 to 60 miles, that had followed the course of the Cuyuni and had formed its first series of cataracts, diminished more and more. About eight miles below the Aracuna mouth and immediately opposite to some insignificant hills, Tokoro or Tokoru-patti Island becomes visible and on its farther side the Cuyuni receives its most considerable tributaries in the Iroma, Rupa, and Appa, which discharge into it from the North. A much frequented path led to the Puruni from a small affluent, the Toroparu. The anxiously expected boat, filled with provisions, that we had promised to forward, had so far not been seen and my brother was beginning to fear that owing to some accident or other having prevented us reaching Bartika Grove we had been unable to despatch the stipulated load. The information they received at an Indian house dispelled these fears, it is true, but at the same time destroyed their hopes of being released from the fast to which they now had been subjected for several days. What they learnt here was that the corial despatched by us got upset when being hauled over the

---

* The Macapa Hills are composed of gneiss and gneissose granite. Below Macapa, the rocks exposed are felsites and porphyries, and those are the rocks which occur "almost without a break" to Aracuna. The breaks are at Amamuri, Dukwarri, and Devil's Hole where gneiss or granite occur. (E.E.W.)



MAP 2.

To illustrate route followed
(a) From Barima to Bartica Grove
via Arabian Coast (Vol. I Ch V)
(b) From Barima to Bartica Grove
via Barama and Cuyuni
(Vol I. Ch. VI)

60° W.
59° W
8° N
7° N
ARUKA R.
BARIMA R.
BARAMA R.
WAINI R.
CATHOLIC MISSION
MOROCCO MOUTH
POMEROON MOUTH
NASSAU
CALEDONIA
POMEROON R.
COAST
ARABIAN
TIGER I.
AURORA
MOUTH OF
ESSEQUIBO
WAKENAAM I.
GREENWICH PARK
CANAL No. 1
DEMERARA MOUTH
GEORGETOWN
KAMPA
BARTICA GROVE
CUYUNI R.
CUTUPU R.
OTOMONG R.
MACAPA
PURUNI R.
MORA R.

V. ROTH, del.

dangerous Wackupang cataract, the whole of the provisions being engulfed in the waters of the fall: furthermore that several valuable instruments had got lost and that even the crew who had been on the very brink of great danger had only saved their lives with difficulty. After paying off the Indians from Haiowa my brother resumed his journey down stream with the ship-wrecked crew. Luckier than the latter they passed the ominous Wackupang Fall with which the second series of Cuyuni cataracts commences. The river bed was also covered with islands, an appearance which only ceased on the farther side of the Cutuan Mountains and River in 6° 47′ lat. N. On the morning of the 26th July they reached the third series of cataracts, which takes its origin in an insignificant mountain range through which the river has broken its way. At the Aruaka-Ematuba cataract they had again to discharge the corials and transport overland, in the course of which they had to cross the Woka or Powis range which rises to about 600 feet above sea-level and stretches W.N.W. to E.S.E. Farther down, several small islands of heaped-up masses of rock split the Cuyuni into innumerable channels and at the same time form the Camaria cataract. This is the most dangerous one of all and only the presence of mind of one of the crew saved my brother and his companions from certain death. At the Ematuba Fall the site allowed of their emptying the boat once more and bringing it overland to the foot: they were just as lucky in getting over the Acayu Fall whence they now had continuous smooth water as far as Bartika Grove where they met us all right, on the 27th July.

668. By the following morning we all left the friendly Mission at Bartika and, travelling down stream along the eastern bank, started on the journey for Georgetown. At noon next day we already lay opposite Fort Island, the one-time centre of the whole Dutch trade and former colonial capital, the remains of which still proudly rise above some scattered plain-looking cottages occupied by coloured people and over impenetrable leafy bush. We stopped to get a closer look at the ruins. Fort Zeelandia was built in the year 1743 in a quadrangle with four bastions furnished with 18 cannon: in addition, an outwork surrounded with palisades containing 12 cannon covered the side facing the water. Every estate had to supply one slave for constructing the Fort, but on its completion no further cost of upkeep was demanded of the planters. The offices of the Secretariat and rest of the Company's staff were formerly located here. Amidst what was left of this once so proud a building, ever creative Nature had long ago retaken possession of the land whence she had been despoiled, and her vigorous progeny peacefully entwined the dark barrels of several iron cannon which, without gun-carriages but even still defying destruction, protruded from out of the gay confusion of succulent creepers. One alone of the buildings, the church, still stood in its surprisingly sublime simplicity: it was the only church that the English found when they took possession in 1803, and Divine Service is still held there.

669. Directly opposite the Island, on the eastern bank, is the mouth of a small tributary, the Bonasika. We had hardly resumed our journey than the incoming flood forced us to land at the opening of an insignificant creek, and to wait for the next ebb. Everybody hurried to sling

their hammocks and make up for the sleep of which we had been deprived by the early departure. The certain hope, perhaps by next morning, of getting into Georgetown and of finding after a long, long interval, letters from home and news of all the loved ones from whom we had heard nothing since March, made me feel so excited however, that I disdained the proffered rest, left my slung hammock undisturbed, and strolled along the bank of the little stream. The *Calathea lutea* and *C. juncea* Meyer reached a truly giant height here. Out of curiosity I measured one such long 18-foot stem that up to this height was still leafless, and was just about proceeding on my way when I saw something move on a decaying tree trunk lying in front of me, and recognised a poison viper (*Trigonocephalus atrox*) just ready to spring and drive me out of its vicinity. Fortunately I got ahead of it, hurried back for my gun and shot it through the head. Had I noticed it but a few seconds later, I probably would not have seen Georgetown again.

670. Commencing ebb gave the signal for departure and we rapidly made our way down stream along the eastern bank which was hedged in with *Caladium arborescens* (Mucu-mucu of the Colonists) until nightfall when, on reaching Plantation Greenwich Park, Mr. Van Günthern, the manager, offered us a friendly night's lodging: on the following morning we once more saw Georgetown ahead of us. On arrival at our quarters, to which we furtively sneaked on account of our clothes having got so terribly ragged on the journey, we found Mr. Goodall already installed there: this was the artist recently appointed by the Government who had only just arrived from England in the packet-boat bringing letters from Germany.

671. I naturally devoted my first care to the collections which I had entrusted to the schooner on the Pomeroon. Unfortunately it was no pleasure to examine their contents: the salt water had made its way into almost every case and had even destroyed much that had not previously become sacrificed to the rain and moist temperature. As the schooner had already set sail again, the responsibility for the damage could not be fixed: nor could I learn whether the captain, in spite of his solemn promise, had got them shifted from where they had been packed by us and brought on deck, or whether the water had found its way into the vessel through a leak. I lost 80 species of living orchids alone, amongst which some 20 were new: the winter's cold in Berlin killed the remainder of those saved here, amongst them the beautiful new *Coryanthus*. The salt water had destroyed a number of bird skins, a large portion of my dried plants, the biggest half of my insects and the whole wealth of my ethnological collection, so far as mildew was concerned. Only one who is himself a collector can really appreciate my feelings when I once more scanned my treasures, collected at the cost of so much sacrifice and danger, in such a sad condition. Instead of from the six to eight cases that I had hoped to despatch to Berlin, only four went by the next ship. And yet misfortune did not cease to follow in their wake even on the farther side of the Ocean because, arrived safely in Berlin, my collection of living orchids that filled two large cases was killed by frost.

672. The depressing news we had received on the Pomeroon concerning the health conditions of Georgetown had unfortunately not been

exaggerated. What an absolutely different appearance the city now presented to what it previously offered when, sparkling with Life and Luxury, the most rousing animation was astir! A gloomy oppressive silence had overspread the place, and instead of shining phaetons and gigs, sombre hearses alone occupied the quietened streets. As is the custom in England these were decorated with huge plumes of ostrich feathers, the white colour of which indicated that a maid or child rested in the coffin. The friends and dependents of the deceased in slow and silent procession accompanied the mourning carriages to the last resting-place, but without sinking in the vault with their beloved dead those distinctions by which human pride divides the living: the Europeans only follow the European departed, the coloured folks only the coloured one, the Negroes but the Negro.

673. The salvoes, repeated several times a day, that rolled over the city from the Garrison cemetery nearby, shewed that the epidemic of Yellow Fever was also raging in the Military Hospital. This last honour was paid to every soldier, even though he had gone through no campaign. It was only the poor sailor, dying from the pestilence in the Seaman's Hospital, who was laid to rest under the cool decking of the grave in a plain coffin, without any showy hearse and attended by no one. Sailors still free from the disease, for instance, were not allowed to leave their ship and follow the recent companions of their joys and sorrows, their former fellow travellers in storm and shine, to the safe anchorage of everlasting rest. The lovely figures and sparkling eyes had disappeared from the Ring, while the Promenade on the water-front mourned in silence and neglect, although the palms still rustled just as mysteriously as before, and the thousands of flowers continued to fill the atmosphere with their fragrance. The whole sight vividly recalled to mind the time when cholera broke out in Berlin and spread its dismal crape over the equally lively city of the Linden trees. The scourge was still claiming many of our friends, several of whom we never saw again.

674. The fever wrought the most terrible havoc amongst the first battalion of the 52nd Regiment, the sailors, and the immigrant Portuguese. The first mentioned lost in a short time 80 N.C.O.'s and men, and four officers on which account it was transferred, immediately after our arrival, to Berbice: of the sailors upon the few ships that lay in the harbour 62 had already succumbed to the disease, while among the Portuguese six out of every ten attacked always died, with the result that out of a population of 23,000 individuals, sixteen deaths on an average occurred daily. It was during this period that, were one to cross the threshold, he would see plenty of people who—suddenly seized by the complaint, and unable to reach their homes,—would be lying helpless on the pavement, until the Sanitary Police found them and had them conveyed to Hospital: I was repeatedly witness of awful scenes of this description.

675. Small-pox to which so many, particularly Negroes, fell a victim, raged in such ghastly association with this Destroying Angel that the

Executive found itself forced to start a special Hospital for it. Unfortunately this was established in our neighbourhood owing to there being a house not far off that proved suitable for the purpose: in the course of a few days it was overcrowded with sick. The physiognomy of a Negro is not exactly one of the most engaging at the best of times, but this is increased to one of horror when the head, bared of all hair, is disfigured by pock marks.

676. Yellow fever which had not appeared epidemically since 1822, except for a few cases cropping up almost every month in consequence of the steady immigration, commenced to make its presence felt again in 1837, when it was probably brought about by local causes and continued almost interruptedly until 1841. The wharves being formerly erected on piles, as already mentioned, the flood-tide in those days could wash away all the dirt and rubbish collecting there. When therefore the posts were replaced by solid masonry the high water could no longer really make its way into the narrow channels running between adjacent properties, and maintain its so salutary an influence upon the sanitary conditions of the city. The decomposition of all vegetable and animal substances which takes place so rapidly in the tropics soon engenders a number of miasmata, which, in the opinion of the medical men, are to be regarded as the true causes of the epidemic. The disease again spread from Water Street over the whole city in 1837 and 1839. In the latter year it was believed that the scourge had disappeared until it suddenly broke out again with extraordinary virulence among the European troops where it occasioned terrible losses: it was probably brought about by the Bight, stretching towards the east of the barracks, being thickly beset with mangrove and courida bushes, because no deaths occurred at the time either in Berbice or in any of the outposts. All doctors are agreed in this that Yellow Fever is a peculiar Typhus; in fact, an exacerbation either of the intermittent fever so mischievous in the tropics, or else of the bilious fever likewise very plentiful here. Up to now it has only raged within the coastal area of Guiana and has usually only attacked those who have not as yet got accustomed to the sultry unhealthy atmosphere pregnant with infectious matter. For the rest, the disease is limited to the stretch of coast and is one of the greatest rarities in places lying from eight to ten miles inland. The outbreak of the disease generally begins with the end of the long wet season when the thermometer shows a temperature of from 70° to 89° Fahr., and rages most in September and October. The former assumption that it infects by contact or association with the sick person has proved to be unfounded, although it cannot be denied that it takes on an infectious character by overcrowding the sick people and by individual disposition. The doctors, at least over there, are not as yet in agreement as to whether the gall, liver, and portal system do constitute the seat of the disease, because the blackish substance (Black Vomit) which the patient brings up in the last stage is said to have very little resemblance with bile. Alexander von Humboldt's statement that this "coffee grounds"-like substance leaves indelible stains on linen, wood and wall, has been confirmed on

my own wash and sickroom. If one heats it to a moderate degree it develops a quantity of sulphuretted hydrogen.*

677. Within a few days after arrival our hitherto fellow travellers, Lieut. Glascott and Secretary Hancock, tendered their resignations to my brother and the Governor. Both had been none too pleased with the perils and hardships of an expedition like ours, and as the most dangerous of the journeys were still to be performed they thought it wiser to withdraw before they started. Glascott intended settling in Georgetown as a Land Surveyor, especially as Emancipation had brought about considerable changes in the relations of property and opened a profitable field for his activities: Hancock on the other hand wanted to renew at the Colonial Hospital the medical course that he had thrown up a long time before, and later on to practise as a full-fledged physician. Unfortunately he fell into bad company, left the Hospital a few days later, and indulged his propensity for spirituous liquor unchecked: within three weeks of leaving us he was down with fever and beyond hope of recovery.

678. A lucky chance relieved my brother quicker than he expected, of the dilemma in which Glascott's retirement had placed him. A certain Mr. Fryer who had served in the Anglo-Spanish Legion at first as doctor, and then for three years as officer, and had fought in the battle of Vittoria and several others of that campaign, but after the disbanding of the Legion wanted to try his luck in Guiana, gladly accepted the appointment offered him. The loss was therefore replaced and no further obstacle threatened on this score, but my brother was still waiting in vain for the new instructions that were delayed owing to a change in the Ministry at home having taken place in the meantime. Although what with the present sad and gloomy conditions of the times, we felt very restless at having to postpone our departure until the receipt of orders to that effect, we nevertheless had to make the best of a bad job and mutually reproved one another for fretting. The Smallpox Hospital, however, made our stay still more depressing, for owing to the large number of patients and small number of attendants, it happened daily that often more than one patient mad with fever, would escape from the Institution and, owing to some inexplicable predilection for us, almost always seek asylum in our quarters from the dangers created in their fevered imaginations. The look of such a madman who could only be brought back to hospital by force and to the accompaniment of the most

---

* This is an excellent example of the confused pathology of the day with regard to the diseases in question. The author was probably correct in saying that "doctors are agreed that Yellow Fever is a peculiar Typhus" since little was known as to the aetiology either of Typhus or of Yellow Fever. Yellow Fever, Typhus and the various forms of Malarial Fever appear all to have been grouped together. It is noteworthy that the Yellow Fever epidemic was confined almost entirely, as he remarks, to the City of Georgetown, Berbice and the outposts escaping. This distribution, of course, depended largely upon the distribution of *Stegomyia fasciata* in those days. The whole description, however, is an excellent example of the remarkably acute observation of the author. He notes that it attacked ' those who have not yet got accustomed," "begins at the end of the long wet season," that the "former assumption as to contact or association with sick persons is unfounded,' the "black substance had little resemblance to bile," etc. (F.G.R.)

awful shrieking was truly horrible and one can hardly imagine anything more terrible than those frightened figures with bald heads and bloody faces. Under these circumstances I gladly accepted Mr. Bach's invitation to spend a little time on his estate where I would find an infinitely richer field for my botanical excursions than what the environs of the city could now offer me. I was soon sitting beside my kindly host who, just returning from town as a member of the Colonial Parliament, was now on his way up the Demerara to Number One Canal, where his fine estate of L'Heureuse Aventure was close by. The pretty residence was situate about 100 paces distant from the canal, and connected with it by a wonderful avenue of orange trees and of flowering Agaves that spread out their 50 to 60 foot high flower-stalks like colossal candelabra: for one of these giants stood regularly between every two orange trees. A glorious hedge of *Clerodendron inerme,* carefully trimmed with shears, surrounded the front of the desirable mansion that had been built in Dutch style. The out-houses stretched away to the right of the avenue while a large green pasture, planted up with huge *Erythrina Corallodendron* trees that sheltered a herd of cows resting under their shadows, led away to the left. The garden, which had roused my curiosity ever since I came to America, immediately bordered this grassy spot. The interior of the building was quite as nice as the outside, but it did not interest me just now. My curiosity drove me out again to see the cultivation which latter had also been described to me as a model farm. Having already received the orchids collected by my brother in the interior during his journeys in the years 1838-1839, an almost complete collection of all the Guiana orchids was to be seen gathered here in a comparatively small space. There was not a tree trunk that did not have growing upon and below it the most beautiful plants and blossoms, while huge stands with hundreds of boxes contained the young plants for which no more room was to be found on the trees and branches. The glorious *Cattleya superba* Schomb., *Burlingtonia candida* Lindl., *Coryanthes maculata* Hook., *C. macrantha* Hook., *Schomburgkia, Epidendron, Brassavola, Barkeria, Bletia, Aspasia, Maxillaria, Huntleya, Cycnoches, Catasetum, Stanhopea, Gongora, Peristeria, Monachanthus, Cymbidium, Zygopetalum, Jonopsis, Rodriguezia, Fernandezia, Pleurothallis, Brassia, Sobralia, Cleistes, Vanilla, Cyrtopodium,* and *Galeandra* with all their known species were grouped together according to the colours of their flowers, and formed in fact a real Fairy Garden in which almost every sense found free indulgence. Remaining indigenous and foreign families planted in beds for which the lovely *Amaryllis Belladonna* formed a border were equally as fully represented as the orchids. A thicket of *Gardenia florida* and *Hibiscus rosa sinensis* encircled a small pond upon the surface of which the glorious *Eichornia azurea* Kunth., *Limnocharis Humboldtii* Rich., *Burmannia bicolor* and a number of *Nymphaeae* spread their motley covering of flowers: above it a huge *Cassia fistula* stretched its branches hung with innumerable seed-pods an ell long. Sad to say one still missed among the *Nymphaeae* the

Victoria regia, that botanical wonder which all attempts to domesticate here have hitherto proved ineffectual.*

679. However much I was enchanted with this lovely garden and its abundance of beauteous flowers, I was just as extremely interested in the coffee plantation: as a matter of fact the regularity of the grounds and buildings, the carefully considered plan for taking advantage of the land and its waters, in a word its whole outward arrangement and high intrinsic worth deserved full recognition. I will attempt to describe Mr. Bach's estate, L'Heureuse Aventure. From the back of the residence a broad straight main-walk, planted up with fruit trees, divided the whole flat into two equal parts: between every two huge mango trees were to be seen growing two other fruit trees, such as *Achras Sapota, Persea gratissima, Mammea americana, Citrus decumana, Anona muricata, A. squamosa, Anacardium occidentale*, and *Tamarindus indica*. A trench that ran along and parallel with the main-walk on either side separated this main way from the 32 foot broad coffee-beds, bordering upon it at right angles, which were again divided from one another by two-foot wide drains through which the water collecting was led to the above main trenches. Every bed contained from three to four rows of coffee bushes, of which each row stood eight to nine feet from the next, all four rows being enclosed by two rows of wide-branched *Erythrinae* to protect them from their greatest enemies, the scorching sun and sharp north wind, especially during the blossoming when both exert a most damaging influence upon the harvest, which indeed they may spoil together. If the blossom has survived a warm moist temperature of from 75° to 85° Fahr. and dry sunny weather follows, the planter's hopes are satisfied, because he can then expect 1½ pounds cleaned coffee from every fullgrown bush. A labourer can comfortably look after two acres of land and at the same time pick the berries, because after the plantation is once established he only has to weed and remove the root-suckers two or three times. When the plant has reached a height of from four to five feet it is "topped" so that the side branches may increase and the flow of sap to them from the root-stock be assured. The cost of bringing an acre of bush under coffee cultivation amounts to from 60 to 80 dollars, according to the nature of the bush. To set up a coffee plantation one wants young seedlings that are grown in special beds or the seed itself is planted in the spot required. In the former case seedlings that have reached a height of two feet are transplanted: these are pulled out with great care, but neither the tap roots nor side roots are lopped. In two years' time the plant has already reached a considerable height, and in the third a small crop can be expected. From the plantation I made my way to the coffee mill or thatch-shed (*mooslage*) where the ripe berries are first of all brought. These are picked twice a year, in May and June and from September until November: the blossoming for the former crop begins in November and lasts until December, that for the second from the end of March to the end of April. When the pulp gets quite red the bean is mature and the work of

---

* Subsequent attempts in Georgetown and elsewhere have however met with success. (Ed.)

harvesting commences, the ripe beans in the meantime being carefully picked daily. When the labourers have loaded a puntful this is taken to the mill, where the beans are gradually poured into a box raised high up: they fall out of this through an opening on to a roller which, supplied all the way round with longitudinal strips of beaten copper, turns in a half cylinder of wood that is grooved on the inside and lined with copper bars. By means of a winch at each end of the roller this is turned on its own axis and the beans in the narrow space between the roller and the half cylinder are thereby hulled. From here the soft squashy mass passes over into a long guttering fixed at a height of about four feet from the ground down the bottom of which runs an equally long slit: this guttering is covered by laths laid on top in such a way that on both sides there is left open a space through which the hands of several labourers, generally women, press the hulled beans through the slit, and the pulpy mass thus kneaded in the guttering is shoved on to her neighbour who manipulates it again. Below the guttering runs a stone channel filled with water into which the beans fall and where they are completely rinsed of the slimy stuff still sticking to them. All beans that float on the water, the so-called "drift" or "waste" coffee, are separated from those that sink: those still remaining behind in the pulpy mass are subsequently separated from it and put aside with the drift. Directly connected with the mill is the drier that consisted of a brick pavement more than 200 feet long and about 80 feet wide, raised towards its middle, supplied with a number of three-inch wide gutters and having a six-inch raised edging around the whole of it: when rain falls the water escapes by way of the former. The beans after the washing are spread out on the pavement to dry, after which they are poured on to the floors of the coffee-logie directly adjoining. This consists of a big building with three to four airy floors, upon which the beans have to be continually turned, so that the coffee may not become somewhat musty and mouldy through the moisture still remaining. In the lower room of the coffee-logie is to be seen the 40-foot long stamper, a huge tree trunk with a number of round holes sunk in it. When the coffee on the floor is completely dried it is once again poured in small quantities into these cavities, and pounded with wooden rammers to remove the fine outer skin, a process that has to be handled with the greatest care so that no beans may be crushed, and at the present time is generally carried out by stamping-mills. Formerly the value of a coffee plantation of about 750 acres (300 Rhynland square roods to the acre) amounted when in good condition, to from 20 to 25,000 pounds sterling: after Emancipation it sank to from 4 to 5,000 pounds.

680. Mr. Bach was born in Jever in Oldenburg and as a young fellow of sixteen without any means, came out to Demerara, where he obtained a billet as overseer on an estate. Thanks to his industry he acquired a considerable competency and subsequently bought L'Heureuse Aventure where he spent his time in cultivating the estate and pursuing his favourite study, botany: his voluminous library referring to this department of science was undoubtedly one of the choicest. In Mr. Bach's whole character and manner of living one could not deny the

Dutchman. He drank his bottle of Rhine wine a day, kept an exquisite table and daily observed the same strict regularity: he got up to the minute and with watch in hand, gave his cook the time when to put the eggs on to boil for breakfast, and similarly when she was to take them off and place them on the table: in fact with his watch Mr. Bach got out of bed, with his watch he regulated his day, and with his watch he brought it to a close. I soon got accustomed to this strictly ordered way of living and always turned up in time for meals, for it did not take me long to learn that those who were late were regarded as non-existent. No sooner had I become properly schooled than, sad to say, a serious inflammatory fever caused a violent upset in this restful life under Dutch rule. Though the scorching sunshine and tropical rain showers that had so often soaked us through on the expedition might have paved the way for the disease, its outbreak was hastened by my own thoughtless ardour.

681. Directly after my arrival there I had heard at times of sunrise and sunset the awful screeches of the many howler-monkeys (*Mycetes seniculus*) proceeding from the virgin forest which in many places stretched down to the canal, and yet I never succeeded in locating the animals on the many excursions I undertook. As one morning after breakfast, with hunting gear in hand, I was making my way to the forest and again heard the ghastly shrieking within its depths, my zeal became fired for the chase. Without looking to right or left I hurried through thick and thin in the direction of the noise. After a good deal of exertion and a long search I finally reached the troupe without my being noticed. The musical choir, perched ahead of me upon a high tree, was conducting a concert cacophonous enough for anyone to believe that all the wild animals of the forest were being engaged in a fight to a finish, although it is not to be denied that it was governed by a sort of harmony: sometimes the company, distributed over the whole tree, suddenly ceased their noise as if to a time-beat and sometimes, equally unexpectedly, one of the performers would strike up his jarring note anew, and the howling commenced afresh. The bony drum of the hyoid-bone which by its resonance gives just that mighty strength to the voice, could be seen moving up and down during the screeching. There were moments when the sound resembled the grunting of a pig, in the next second the growl of a jaguar in the act of pouncing on its prey, to change soon again into that deep and awful snarling of the same carnivorous beast when, surrounded on all sides, it recognises the danger threatening. The horrible performance nevertheless had its laughable side and the face of the most melancholy misanthrope would momentarily have shewn traces of a smile had he seen how stiffly and gravely these long-bearded concertists regarded each other. Mr. Bach had told me that every troupe has its own precentor, which is distinguished from all the deep bass-singers not only by its high shrill note but also by a much slenderer and slimmer figure. I found the first part of the statement absolutely confirmed here, but as to the second I searched in vain for the fine and slender figure, though, instead of that I noticed upon the next tree two silent individuals which I took to be sentinels on guard: if that were the

case they had performed their duty badly enough, for I was standing close by unnoticed. To get hold of a young living specimen if possible I had taken aim at a female with such a one on its back. The shot went off and with the most horrible howling and growling the whole troupe, taking some huge jumps from tree to tree, scattered helter-skelter in all directions. In trying to follow, the wounded mother's strength soon failed her, and after several fruitless attempts she clasped the branch and uttered those so often described awful human-like groans which were answered on all sides from a more or less remote distance by the others: indeed two of the fugitives even turned back, probably to render assistance in answer to her wail, though this may have seemed risking too much when they recognised me. A second shot put an end to her sufferings and brought her down, with the youngster still clasping tightly to her back: I removed it, and placing it on my own shoulders, intended making my way home. But where was home? On my right, on my left, in front, or behind me? Everything I asked myself about it remained without reply because in my recent violent haste I had taken no notice of the way and had now lost its direction. Without fixing my sight on anything at all, without breaking a twig, I had just followed on to where I heard the concert, and now looking perplexedly around, could find no outlet from the labyrinth. "Straight ahead" the old saying advised me, and so I took a quick and firm course over open and dense brush-wood, recognising my foot-tracks as I thought, in every pressed-down leaf without any foreboding that I was all the time only increasing the distance from the starting point. Twice I even got back to the tree from which I had obtained my quarry: twice I turned my steps in a different direction, but on each occasion in vain—the closely interlaced tree-tops, which blocked every ray of sunshine from the path, remained just as thickly entangled. Suddenly what had hitherto been twilight changed to night, and the rain fell in torrents while the vivid lightning flashed at intervals between the dull booms of thunder across the dense forest-depths and drove its denizens past me in awe-struck flight. Heedless of the most beautiful birds that rose ahead of me, heedless of the troupes of monkeys that enjoyed watching my misfortunes, heedless of the many deer, tiger-cats, in fact everything that I came across—I now had but one desire on which my whole interest was centred, to reach the end of the forest. At last, exhausted and overpowered, I threw myself under a tree to recover, yet the increasing darkness would not let me rest. I jumped up afresh, commenced wandering off again and soon found myself once more under the very tree that I had only just left. Hands and face were already torn and the remnants of my trousers and linen jacket hung down in long strips when, with a final effort, I broke through another dense clump of bush and saw a second apparently endless one lying beyond it. With this last display of strength my courage failed and with it the hope firmly implanted in me up to now of finding my way out of the labyrinth to-day: I lay down. I remained a long while in deep meditation until my eyes fell upon the dead monkey which I had been unconsciously carrying about with me, and my thoughts took another direction. The youngster, wet through, still sat on its lifeless mother and now sought to still its hunger at her dried-up breast. Overcome with fatigue I fell asleep. When I awoke the night was pitch dark and what with the thousands of mosquitoes making a St. Laurence's grill of my shake-down and the cold making its way through the wet remnants of my clothes, all idea of rest was out of the question. It was an awful time, the horror of which was still further increased by the wild flights of imagination caused by the fit of fever that I already felt within my limbs. In every rustle of a leaf upon the ground I feared a snake, in every glow-worm whirring through the bush I recognised the sparkling and fiery eyes of a jaguar: indeed, in the former case my fright increased to a certainty when I felt something cold creeping upon me and did not dare to brush it off in case of hastening its deadly bite. I sat motionless beneath the forest trees and with bated breath stared into the darkness until the whimpering of the little ape, that probably missed the accustomed warmth on its mother's cold body, recalled me to my immediate surroundings and to an appreciation of my desperate situation. There still remained the hope that Mr. Bach, anxious about my absence, would have sent people to look for me: in this I was not deceived, for I soon heard the sound of a horn and from time to time the report of a gun. My spirits revived. I seized my weapon to answer the shot, but the trigger was pulled in vain, the percussion cap snapped without effect, and the barrel remained silent. Mad with rage I threw away the gun that the rain had rendered useless, the powder having turned into pap, and wanting to jump up and hurry after the shots that were retreating more and more, found it to be impossible owing to the stiffness in my limbs—finally I lost consciousness and resting on the dead monkey I sank into a deep sleep. At daybreak I again heard voices and shots approaching and my calls were heard at last. I lay about a hundred paces from the road, an hour from Mr. Bach's estate: the little monkey was huddled up on my shoulder. They brought me to the house where by afternoon I was down with a violent attack of fever that left me delirious for several days when my powerful constitution rose victorious over the disease and gave me back my life. In company with my brother, whom Mr. Bach had sent for during the period of greatest danger, I returned to Georgetown.

682. The dry season had now set in again and the sombre rain clouds disappeared. The following indicate the results of meteorological observations for August:—

BAROMETER IN INCHES.				THERMOMETER FAHR.			
Max.	Min.	Av'ge.	Greatest Difference.	Max.	Min.	Av'ge.	Greatest Difference.
30·09	29·83	29·949	0·21	89	78	82·532	11

On our departure at the end of December the following were the records for September, October and November:—

BAROMETER IN INCHES.					THERMOMETER FAHR.			
M'th.	Max.	Min.	Av'ge.	Greatest Difference.	Max.	Min.	Av'ge.	Greatest Difference.
Sep.	30.00	29·74	29·878	0·26	88	79	83·316	9
Oct.	29·99	29·80	29·904	0·19	89	78	83·5	11
Nov.	29·96	29·77	29·883	0·19	90	77	82·366	13
Dec.	30·01	29·82	29.905	0·19	87	75	80·19	12

683. A peculiar difference takes place with regard to the seasons of the year between the interior and coastal districts: for in the former the change occurs but once, whereas on the coast it is repeated, so that in the latter one speaks of a short and long rainy and dry season respectively. The rainy season commences with December and continues up to February when the small dry season follows on to April which again, from May to July, is interrupted by the long wet one. In the interior on the contrary, only one rainy season is recognised and that from April until middle of August. During the rainy season the land wind is the one prevailing: towards its end this changes into a markedly predominant Easterly Trade-wind which, when the day is drawing to a close, always becomes stronger, but by ten o'clock at night takes off again. Associated with this, however, the atmosphere has yet more subsidiary currents, particularly a sea and land breeze: the former blows from the north-east and cools the heat of the day, while the warm land-breeze on the other hand rises at night in the south-east and prevents its cooling too rapidly. In general the temperature of the day differs from that taken of a morning before 6 a.m. by eight to ten degrees.

684. Immediately after our arrival from England the Governor, acting on instructions, had sent the Inspector of Police and two officers of the 52nd Regiment to Pirara with despatches in which England requested the evacuation of the village on the part of the Brazilians, a demand which up to now had not been obeyed. Shortly after our return from L'Heureuse Aventure my brother got his marching orders at the same time that the Governor received instructions to send to Pirara, along with our expedition, a detachment of the 1st West India Regiment including surgeons, commissariat, two cannon, and the material necessary for defence purposes: they were to drive the Brazilians out by force and take possession of the spot invaded.

685. This information gave new zest and put fresh life into us, and as we were probably saying farewell to all civilisation for several years to come, had to make the most varied preparations which, owing to the continued prevalence of fever, could not be carried out as easily as we wished. All the ridiculous and vexatious scenes that had already presented themselves during our previous preparations were re-enacted to an enhanced degree. One boat could not now hold the provisions and trade which the expedition found it necessary to take: so a second one, 41 feet long, had to be built, and two smaller ones, second hand, from

25 to 30 feet long, had still to be bought. I was also forced to get the sides of mine raised, for which I of course had to pay the monstrous price of 81 dollars.

686. After the small squadron of five ships, with the national colours neatly painted on, was launched, the corials were christened: my brother called the largest one "Louise," mine I named "Elizabeth." The largest portion of our former boathands were signed on afresh as paddlers; Stöckle likewise performed duty again and brought along another three Germans who offered their services, and even Hamlet left my brother no peace until he once more installed him as cook. It thus came to pass that we hired a portion of the boats' crews even before the Waikas and Warraus whom Caberalli promised to supply had put in an appearance: it was these upon whom we mostly depended because they are undoubtedly the best pullers. Unfortunately, however, the number we wanted never arrived and, except the captains (steersmen) whom my brother had already picked from among the coloured people on the Essequibo, the paddlers still missing had to be replaced. Each coloured puller received monthly 15 dollars, each captain 20, and each Indian 6, for all of whom my brother had still to find their board: this consisted of rice, salt fish, pickled meat, biscuit, and two glasses of rum together with a fixed quantity of tobacco daily. Forty-one persons, however, required a considerable quantity of provisions, which could not be procured so quickly. Eight of the most useful and serviceable of the lot were signed on for two years with the expedition: the remainder had only to take us as far as the Macusi settlement, Pirara. When the boxes and barrels of provisions, the numerous trunks and packages containing "trade" for the Indians whom my brother thought of engaging amongst the different interior tribes, came to be reckoned up, one can imagine how heavily our five boats were freighted when finally ready to leave. And yet our preparations were as nothing compared with those of the army of conquest for whose transport nine big vessels were built which, in addition to the detachment, had also to carry four months' provisions for Pirara. As the soldiers were not engaged to serve as boathands, 120 paddlers had to be taken on: each soldier and boathand received a daily ration of ½ lb. salt meat with rice and biscuit, besides a certain measure of rum and a fixed quantity of sugar.

687. In spite of being thus busily occupied, consequent on our departure that was drawing so nigh, we had nevertheless not forgotten poor Maicerwari and never let a week pass without paying him a visit at the jail, the strict confinement of which he had unfortunately brought upon himself. It seems that both he and the witnesses on their arrival in Georgetown had been subjected to light custody only, but unable to bear even this restriction, had seized the first suitable opportunity of returning to Cumaka. Their escape naturally rendered their confinement more severe, and after being brought back Maicerwari had been locked into a narrow cell. Notwithstanding that my brother had solemnly sworn that Cumaka was situate in disputed territory and could be claimed just as much by Venezuela as by England, yet the authorities wanted to bring the poor boy up for trial at the next Criminal Sessions

that were to be held not before March. When on my return from L'Heureuse Aventure I stepped for the first time into Maicerwari's cell I hardly recognised our powerful young friend whose eyes once beamed so bravely. He was a real picture of misery, his whole body swollen, and the brilliancy of his eyes dulled. The unfortunate lad's joy on seeing me was boundless, but it was even greater however when my brother obtained the Governor's permission for him to walk about the prison-yard during the day, and to exchange the hitherto sack of straw for his beloved hammock at night.

688. The case of poor Maicerwari might almost have upset the whole of our calculations. The Governor's wife and daughter arrived from England a short while before we were to leave. As the latter had received her education on the Rhine she spoke German fluently and with almost emotional preference, and we spent most of the evenings up to the time of our departure in the company of these intellectual and interesting ladies: they rendered themselves equally conspicuous by their highly cultured tastes as well as by a kindliness of heart which enhanced the natural loveliness of Miss Light with the higher charm of spiritual grace. In company with other ladies Miss Light seemed to be the only red rose in a big bouquet of white *Centifolias* whom unfortunately she was only too soon to resemble. When we returned from the primeval forests to Georgetown two years later, not the slightest trace of this youthful bloom, this delicate tint, this breath of fresh rose, was to be seen on her once glowing cheeks.

689. The last day of our stay in Georgetown was to wind up with a big ball which the Governor had fixed for the 22nd December in honour of his wife's and daughter's arrival in the Colony. To attend this enchanting entertainment was the one and only heart's desire of all Georgetown's gilded youth, for the whole fashionable world was to be invited. All arrangements were made for going next morning direct from the ballroom on board the steamer, "Flora Hastings," that had been already loaded and was to take us, together with our boats, up the Essequibo as far as Station Ampa. My brother went out to say goodbye to some families, whom, owing to their colour, he did not dare hope to meet at the Governor's, but within a few minutes hastily returned looking upset. "Bring this and that here," he said to me. "Look after this and that, I've got to clear, for I just met counsel for poor Maicerwari who told me I cannot leave Georgetown now as I have to attend the criminal sessions due in March and must again swear to what I already told the High Sheriff on oath. But so that I cannot escape their intentions, the warrant is just being got out and will probably be served on me within the next half hour." There was not a minute more to be lost, because my brother had to be secretly smuggled out of the city before the minion of the law crossed our threshold: were the latter to meet him, every chance of the expedition getting away before the end of the sessions would be lost. The laws in connection with such a summons are so strict that if the warrant had been served on my brother by the bearer or had been put down in his presence, not even the Queen, much less the Governor, could have freed him from his legal obligations. It

was of the utmost importance therefore that my brother should not stay a moment longer, especially as he could be of no further use to Maicerwari by re-swearing to the affidavit, and besides, it was generally understood that the latter would be let off. Without taking a minute to decide he went to the house of a friend living on the water-front, which he intended leaving after nightfall for the western bank of the Demerara from where he would ride to the Essequibo and wait for us at Plantation Greenwich Park: we were to let him know by an arranged signal whether it was safe for him to board the steamer.

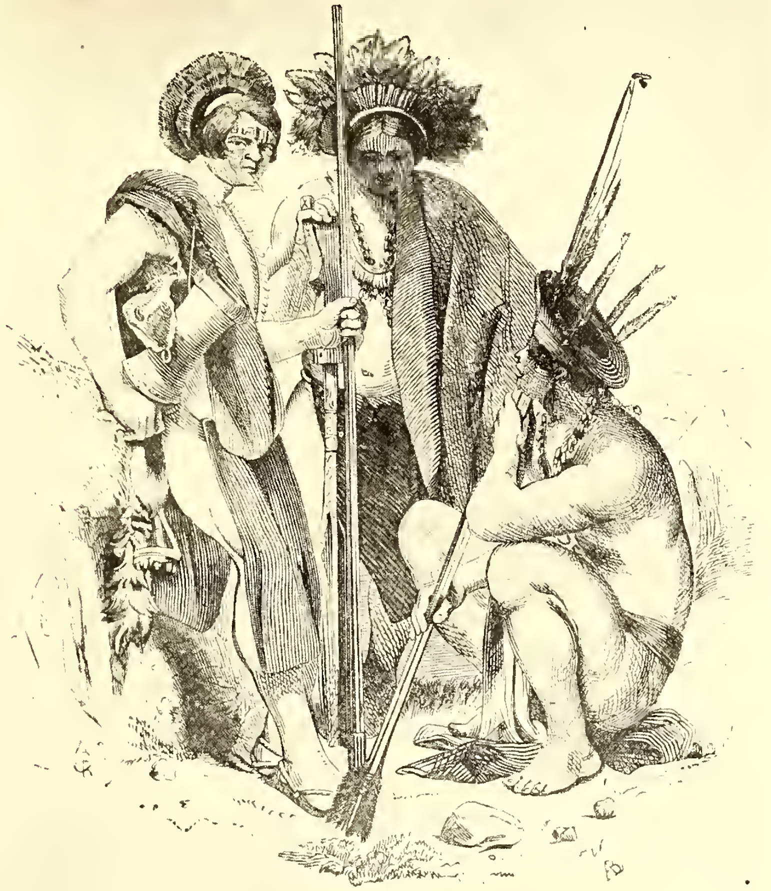
690. Hardly had he got out of the house than a police officer with the mighty document in his hand came and asked for him, and when I told him that he had gone out, handed it over to me: I nevertheless took good care not to touch it, because no one can be forced to take a warrant for someone else, but everybody who does so engages himself to guarantee the appearance of the person summoned. After awaiting in vain my brother's return for over an hour and making repeated ineffectual attempts to force the warrant upon one of us, the deluded servant of the law threw it on the ground and left the house. He returned soon after with a Police Inspector and a whole crowd of subservient spirits to search the residence from floor to garret, and then to surround it on all sides with spies so as to make sure of trapping their man on his return: in fact when at night we got near the Governor's house we found it also surrounded by these gentry, they certainly seeming to have thought that my brother could not resist the attractions of such a ball. And in fact the ball was brilliant, the most brilliant that I had as yet attended, and at which, after missing them a long time, the well-known melodies in the waltzes of Strauss and Lanner fell upon my ear. I was a passionate dancer though I felt, after waltzing with Miss Light a few times, that my strength had already become very much reduced by the climate, and could not blame my pretty yet young and vigorous partner for the statement that she found none but weak and bad waltzers here. I was much amused over the thousand and one questions about my brother: there was general surprise that he, the Governor's adjutant, should be absent, because the expedition had to leave in the morning and for that same reason His Excellency had chosen this very day for the festivities. Of course I also did not know where he was, and could only reply in similarly surprised strains.

CHAPTER VII.

Expedition to the Interior of Guiana—Departure from Georgetown—Ampa Station—Osterbecke Point—Commencement of the Rapids and Cataracts—Flora of the lower Essequibo region—Itaballi Cataract—Aharo—Laying season for Turtle—Gluck Island—Arissaro Mountains—Commencement of the second series of Cataracts—Waraputa Mission — Hieroglyphics — Kanaima — Twasinki and Akaiwanna Ranges—Tambicabo Island—Ouropocari Cataract—Achramucra—Rupununi—Carib settlement—Kirahagh Aurime—Savannah—Macusis—Victoria Regia—Haiowa Macusi village—Sudis gigas—Savannah fires—Wai-ipukari Inlet—Tapir hunt—Awaricuru.

691. Fuddled and drunk after the night spent in revelry, and tired out with waltzes and quadrilles, we sneaked at daybreak into our quarters really with the intention of immediately going aboard the steamer, though this actually took place only by 10 o'clock, because, owing to my brother's absence, I yet had to discuss some further business with the military officers who would only be following a fortnight later.

692. The word of command from the captain set the machinery agog, the paddle-wheels ploughed bravely into the waves, and we had already somewhat cheered the depressed paternal heart of Hamlet who, in the swishing and booming of the pumps, thought he recognised the bitterest reproaches of his wife and children left crying on the wharf and whom he, howling in the paroxysm of his grief, wanted to rejoin by jumping overboard,—when from behind a thick clump of bush there pulled towards us a boat containing several men of whom one ordered the skipper to stop. It was again the Police Inspector and his subordinates who were come on board to search the vessel through for my brother. Amidst the general laughter of the crew and many a witty remark with which the coloured people are always ready, he had to return to his boat without having discovered the escapee while we, amidst the joyous hurrahs of the crowd gathered on shore and the equally joyous answer of the sailors speedily sped around the 20 mile wide peninsula formed of alluvial soil that divides the Demerara from the Essequibo. On reaching the mouth of the latter a last farewell for many a long day was said to Georgetown as it hid behind the tongue of land and the delightful estate of Greenwich Park came into view. The arranged-for signal was given notifying freedom from danger and hardly had the captain checked the vessel's engines on her rapid course than a boat made its appearance from out of the thick growth on the shore, and brought my brother and Mr. van Günthern on board where they were both heartily received. We reached Ampa Station, lying 30 miles further, only about midnight, at which late hour we had to discharge cargo, the steamer having to return to town next morning. Stöckle's former unlucky star seemed as if it were about to follow him again at the commencement of this



Macusi, Paravilhano- und Warrau-Indianer.

MACUSI, PARAVILHANO, AND WARRAU INDIANS.

The left hand figure is Saramang, a Macusi from Pirara; the central, is Sororeng, one of the Paravilhanos from the Rio Branco and its tributaries: the right hand one is Corrienau, a Warrau whose tribe occupied the coastal regions from the Orinoco to the Corentyn. All these three Indians were brought to England by Robert Schomburgk in 1839, and after a nine-months' stay, returned to their Native homes. Sororeng figures plentifully in the texts as the guide and friend of Richard Schomburgk, (Ed.)

journey: for instance, while busy discharging, we suddenly heard a great splash in the water and immediately afterwards the poor Swabian crying for help: though more dead than alive he was fortunately soon got on deck again. He could hardly describe in sufficiently ghastly terms the horror he experienced when, for the first time in his life, he had felt the ground give way under his feet.

693. Desirous of completing our crews, my brother, who did not feel too safe at Ampa, hurried off at daybreak to Bartika Grove, quite as much for recruiting the coloured people there as for ensuring the safety of his own person from the persecution of the law. If any suspicious person was to be seen at Ampa two cannon shots would let him know at Bartika Grove that danger threatened and that he must hide in the forest. Ampa Station lies in 6° 28′ 47″ lat. N. and 58° 36′ 25″ long. W. upon a small hill close to the bank from which a very pretty vista opens over the Essequibo which receives specially increased charm from Bartika Grove, the neck of land lying immediately opposite, with its pretty cheery-coloured houses conspicuous among the shadows of the palms and plantains. The rock that cropped up on the hill was identical with what we had found at Itaka, six miles below Ampa, and at the mouths of the Cuyuni and Mazaruni. It commonly consists of gneiss and granite in different modifications amongst which a granite with two different sorts of felspar and white mica is particularly noticeable: great quartz-veins lead through it. The gneiss met with is coloured dark with plenty of black mica and shows in isolated spots copious intervening layers of red felspar.

694. On waking in the morning I was not a little surprised to see that both the goats and several of Mr. Baird's fowls were bleeding in many places, and enquiring for the reason he told me that it was due to the numerous vampires (*Phyllostoma spectrum*) which had nested in the old station quarters: "They have done more damage," said he, "to my domestic animals than the jaguars and tiger-cats from which at least those not attacked can escape. That, however, is not the case here, because these harpies, while sucking the blood, gently wave their wings and so do not rouse the victims from their slumbers." The better to know these cunning creatures which still their thirst for blood with so much sense, Mr. Baird hurried me off to the old building where, clinging on with their feet, three or four such beasties were hanging from almost every beam of the rotten roof. Not far from their sleeping quarters and at the same time under the rafters and cross-beams I found whole supplies of green fruits and long half-ripe pods of a *Bignonia* which, as Mr. Baird assured me, they had dragged there; this would seem to indicate that the animals lived not only on blood and animal food but also upon a vegetable diet. A flowering sawari tree (*Pekea tuberculosa* Aubl., *Caryocar tomentosum* Willd.) must also have had a good deal of attraction for them, because as soon as they came out of their lurking places of an evening they swarmed around it in huge crowds and broke off many of the blossoms. Although my host protested that they have a predilection for bananas I nevertheless believe that they only break the blossoms off the former accidentally while hunting after insects, which

was all the more likely as the fallen flower-buds had not been bitten. A small species of the genus *Glossophaga,* according to the description, especially affects cattle.

695. What I noted to-day in the goats and fowls, I was able to note next morning on one of my people who had been similarly attacked during the night. The blood-soaked hammock and the visible weakness of the man indicated that the loss of blood he had suffered must have been fairly considerable. The wound was on the big toe and had quite the triangular shape left from the bite of a leech: its edges were somewhat swollen. The sleeper had been just as little roused from slumber by the onslaught as were the goats, and it was from his fellow mates that he first learnt that he had been unconsciously bled during the night. The blood still flowed fairly strong from the wound and could only be staunched after a lot of trouble. It is strange that with men it is generally the toes only that the creature seems to attack.

696. Falling into the Essequibo somewhat to the north of the station quarters is the small stream Ampa, on the banks of which we found the Snake tree, so called locally on account of the curious shape of its embryo. My brother had seen it on his previous journeys but had no more chance of examining its flowers then than I had now, the opportunity for doing so being only vouchsafed to us shortly before our departure. As a result of this examination the tree belongs to the family *Sapindaceae* and, on account of the striking resemblance of the embryo, received the name *Ophiocaryon paradoxum* Schomb. The fruit consists of an almost round nut, the size of our walnuts, and on removing the outer shell one finds inside a membrane-covered kernel looking exactly like a rolled-up snake, even the head and eyes being distinctly represented. I found another curiously shaped plant, the *Maxillaria Steelii* Hook. just as plentiful here with its rush-like leaves often 5 to 6 feet long hanging from the tree: the perfume of its brown spotted blossoms excels that of all other species of this family.

697. Though surrounded by the virgin forests and meadows of Guiana, my thoughts last night were intent upon my native country, from which the sea now separated me and where I wandered still in spirit even to-day: for yesterday was Christmas Eve and with this morning's sunrise Christmas Day had brightened up my home. But what a contrast between the garniture of my surroundings and the drapery worn by Nature at that gay festival of the North. There, probably the snow was spreading its white veil over the fallow field, and thousands of hearts beating with excitement were taking no notice of the mad gust of wind blustering through the streets and driving the snow before it, but were only waiting impatiently for the long longed-for moment when the mother was to throw open the room lighted with the Christmas tree. Here, I was sitting yesterday, until late, under the shade of the flowering *Pekea* from where I watched the setting of the sun, as its parting rays poured their richest summer effects over the land, while to-day I was sitting in front of the huge plum-pudding that English custom had transplanted even to these climes. Just as the Thuringian cannot imagine a Christmas dinner without his currant bun

(*Wecke*), the Englishman cannot conceive of one without his plum-pudding. On leaving Georgetown Mr. Fryer had thoughtfully brought along all the ingredients for the dish, but not having yet experienced Hamlet's genius and consequently putting no trust in it, undertook to make one himself, a course of action that forfeited for ever the affections of the jealous cook. Hamlet's contemptuous sniggers betrayed only too clearly that he doubted the success of our Christmas pudding, an opinion to which he still stuck even when the mixture, trembling like the most delicate jelly, appeared with the remaining dishes upon the table, and was eaten amidst the most laudatory opinions of Fryer's culinary skill. As our men from Georgetown would have missed their Christmas pudding just as badly as the officers of the expedition, Hamlet could at least show, by making one for them, that his knowledge of cooking surpassed Mr. Fryer's. Now whether he made a mistake somewhere as a result of being over anxious, or whether while preparing it, his thoughts had wondered down stream to his people in Georgetown where the forsaken mother was perhaps just then preparing the holiday dinner for her children, a thought that impressed itself so vividly upon the paternal heart as to fill his eyes with tears—at any rate, whatever the fault, the men loudly complained about its being hard enough to leave a hole if thrown at one's head, all of which made our cook's vexed countenance frown still more than before.

698. Next day my brother returned with the captains and boathands still required to complete the crews. For navigating the Essequibo, above the first rapids and cataracts, one dare only pick the captains amongst those living on the river, because they not only accurately know the river-bed with its innumerable and truly labyrinthine channels, but also alone possess the confidence of all the Indians in the perilous work of navigating it. The safety of a boat shooting down a cataract in such a channel depends wholly and solely upon the fitness of the captain and bowman, or leading paddler. Where the surface of the whirlpool is peculiarly ruffled the bowman must be able to recognise the depth of the rocks covered under water, and with a strong hand give the boat another direction when such a hidden enemy escapes the sharp eyes of the captain. My brother could not have had a luckier choice than among the people living at Bartika Grove.

699. Immediately after arrival we started distributing our effects among the boats. The astronomical and meteorological instruments as well as other valuable objects were entrusted to the "Louise," the remaining supplies such as meal, rice, ham, butter, sugar, coffee, wine, spirits, and the travelling medicine-chest to the "Victoria," and the barrels with salt fish, pickled meat, cases of different implements and tools to the two little boats: the "Elizabeth" on the other hand contained my gear for preparing the botanical and zoological collections, as well as my small boxes with "trade." Although we had already covered with oilcloth all the cases in which these things were enclosed, we nevertheless still spread large tarpaulins, *i.e.*, hempen coverings daubed with tar and paint oil, over the whole baggage. Still deeming himself none too safe, my brother had been scared out of Bartika Grove into the forest the night before

owing to the arrival of the police boat which fortunately was not looking for him, but had other business to attend to: its appearance there however, had made him all the more cautious, for it was easy for a second one to follow with a warrant of apprehension. When therefore in the evening all the luggage had been packed in the boats he hurried off ahead again in a corial to the farther side of the first Rapids where we were to signal our arrival to him with two cannon shots.

700. With the firing of the Station's cannon, and our flags flying, among which the white and black one of Prussia fluttered gaily from the stern of the "Elizabeth" we left our pleasant host, and making our way up the Essequibo gave an equally hearty response to the farewell of the Bartika Grove residents which we heard from over the water that now was as clear as a looking-glass. Once past Bartika Grove the stream turned for a stretch of about seven miles, as far as Sacarura Point, towards the S.S.E., and then ran an uninterrupted course of 60 miles to the S. and S.S.E., in connection with which the Mazaruni, its tributary, and the Demerara flowed parallel with it at distances of 12 miles west and 15 miles east, respectively.

701. The farther we pushed our way the more luxurious became the vegetation: along the western bank which we followed, were at the same time to be seen certain noticeable elevations. On these rises the friendly settlements of coloured people were everywhere visible amidst thick groups of *Guilielma speciosa*, *Maximiliana regia* and *Cocos nucifera* (Coconut) which, on account of their nuts, are diligently cultivated by the coloured folk and Indians. But these settlements also soon came to an end, and only in isolated spots did a timber getter's establishment make a conspicuous display from out of the lusciously verdant virgin forest where its proprietor found unlimited scope for his industrial activities. That Albion who rules the waves knows so little of her treasures even up to now is particularly shewn by the fact that the excellent timbers suitable for ship-building offered by Guiana have been left absolutely untouched.*

702. On the following morning we reached Osterbecke Point or Monkey's Waist, and with it at the same time the first continuous chain of hills from the coast-line which here narrows the stream to 100 yards, also the reason for its other name of Narrow Pass: the bed otherwise generally possesses an average width of from 1 to 1¼ miles. At Mr. Patterson's establishment we came across the last house but one built by European hands. Two large corials that lay at the stelling were recognised by the coloured men as the property of Missionary Youd, who proposed to join us here and then once again gather up around him

---

*—Besides the *Mora excelsa* the following genera are especially suitable for ship-building and for timbers: *Guatteria Ouregou* Dun., *Caryocar glabrum* Pers., *Sloanea sinemariensis* Aubl., *Cedrela odorata* Linn., *Tapura guianensis* Aubl., *Xanthoxylon hermaphroditum* Willd., *Sideroxylon inerme* Linn., *Eperua falcata* Aubl., *Tachigalia paniculata* Aubl., *Andira inermis* Humb. Bonp., *Dialium divaricatum* Vahl., *Macrolobium bifolium* Pers., *M. sphaerocarpum* Willd., *Swartzia tomentosa* DeC., *Petrocarya montana* Willd., *P. campestris* Willd., *Bagassa guianensis* Aubl., *Diospyros Paralea* Steud., *Labatia pedunculata* Willd., *Pariroa grandiflora* Aub., *Minquartia guianensis* Aubl., *Barreria theobromaefolia* Willd., and *Carapa guianensis* Aubl., not to mention the large number of those that have not even been noticed by the colonists themselves.

at Pirara, under the protection of the military, his flocks that had been scattered by the Brazilians: during our stay in Georgetown he had already received the Governor's permission to do so. As we were too far out from the bank, he was only able to join us at our next night's camp on the other side of Cumaka-Serrima (*i.e.*, Silkcotton Tree Point) upon which is situate the last settlement of the coloured people.

703. We had hitherto made our way up the Essequibo expeditiously and unchecked, but now the changed surface of the water indicated that we should soon have obstacles to contend with. We were nearing the rapids of Aritaka, 6° 9′ lat. N., which we had to negotiate over a stretch of six miles. Innumerable crags, huge granite and gneiss boulders belonging to a range of hills 200 feet high, cut their way here across the hitherto smooth surface of the stream. It is through the sometimes narrow, sometimes broad, intervals and spaces from 40 to 60 feet wide, in and between these crags and boulders opposing themselves to it, that the stream forcibly makes its way, with noise enough to stun one's senses. A number of small islands hedged in these dangerous places, and many leafless withered boughs of huge trees which the roaring flood-waters above the rapids had uprooted and floated down, rose in all directions from out the troubled waters. Numerous companies of osprey (*Halicus brasilianus* Ill.) and some snow-white herons (*Ardea Cocoi*) had chosen these dead trees to rest on and stared at us with inquisitive eyes until they joined the huge crowds of swallows (*Hirundo fasciata* Lath.) which noisily swarmed around us in their repeatedly revolving flight. However interesting as a whole the landscape might be in its mixture of pleasing and bizarre pictures, in the dull uproar of the stream, in the huge crags of rock and in the large number of small islands thickly dotted with an absolutely different vegetation, we nevertheless contemplated it with anxiety, because we all recognised beforehand that it would prove a hard struggle to get over this dangerous row of rapids. We landed at one of the small islands, to bring the corials one by one over the first of the rapids, and although we manned every boat with a double crew they were nevertheless several times dragged back again after already reaching the very summit: the two large ones "Victoria" and "Louise" had to be hauled over. Though we took several hours to negotiate these rapids they were indeed but trifles as compared with those with which we had to contend next day. A small island above this first series afforded us a suitable camp and as we surmised that my brother was waiting in the neighbourhood we fired our small mortar and heard its echo repeated a thousand times over from the cliffs and forest.

704. The island that had been so peaceful up to now was quickly changed into a lively playground: the rations were distributed, a huge circle of fires lighted up the dense leafage, the mighty blows of the axes and cutlasses boomed heavily on all sides through the forest and indicated distinctly enough that the boats' crews were hurrying up to clear and level a spot where they could sling their hammocks. Small fires that had been lighted beneath them threw their strong lights upon the trembling foliage of huge trunks decorated with entwined bush-rope and

innumerable orchids, while the white-smoke columns of alabaster seemed to support the thick leafy roof. But the greatest stir in this picturesque scene was centred around the large fire at the front on which were set the big cooking pots surrounded by an everlasting change of nude black figures: these were kept on the move not only by a desire for the contents, but also by a number of vampires that, attracted by the dazzling lights, were solicitously swarming around them. All wants being soon satisfied, things began to quieten down and the tattling and singing had already ceased when we suddenly heard paddle-strokes close by, and soon afterwards saw fires rising on a near-lying island. It meant the arrival of Mr. Yond with his party.

705. Violent rain-showers unfortunately wakened us some hours later from our sound slumbers and drove us out of our hammocks which we quickly rolled up to protect them from getting wet. In spite of all his grumbling and vexation Hamlet had to make it convenient to follow our example and boil the coffee. After drinking a cup or two, the dark clouds finally lifted from his brow, his cheeriness quickly returned and the previous worry over his wife and child seemed at last to be dispelled: indeed, his temporary ill-humour passed so completely into a stage exactly the opposite that he whiled away the time for us until morning by singing and dancing, talents of which he had not let us have any inkling during the whole of the first trip.

706. After once more notifying my brother, at daybreak, of our arrival by firing the mortar, and shouting our morning greeting to Mr. Yond who was also preparing to strike camp, our little squadron resumed its way until a second rocky barrier abruptly interrupted its course. We had been able to cross the first one with loaded boats, but here we had to discharge cargo, carry the baggage overland, and haul up the emptied vessels over the falls by rope, a labour that from now onwards had to be renewed almost daily. Noon was long past when we finally tied the last boat to the water-side bushes beyond the summit and could again load cargo. A small bend of the river concealed the view, and hardly had we paddled round it than at a short distance right ahead, we saw my brother's camp upon a small sandbank, but at the same time, in the background, a madly rushing mass of foaming water. As our strength had been already severely taxed, and the difficulties still to be overcome were so enormous, we should hardly have got a single boat through the whirlpool to-day, and accordingly postponed making the attempt until the morrow.

707. This intermission before the later evening hours was all the more convenient as I could now admire at leisure the flora as yet unknown to me, on the rocky islands and in between the crags, and make the most of them for my collection. Everything was new, in every plant I noted some form not yet seen, the Orchid family even greeting me with new species. If the growth between and upon the granite crags was not so luxuriant as in the area of the lower river, it was nevertheless equally

as interesting.† Among such for me was that generally feared *Hippomane Manicella* Linn., or Poison Tree of the creoles, abundantly loaded with its yellow ripe fruit resembling our apple, the exterior of which is indeed very inviting, but when eaten causes acute intestinal inflammation and inevitably fatal results: the milky sap of the tree is so acrid that it soon blisters the epidermis.

708. Day broke and with it the fatiguing and perilous work commenced. The whole wide stretch upon which the released masses of water flustered and foamed had to be contended with, and there were spots along it at which the most undaunted would have doubted their success. Amongst the most dangerous must be especially noted the enormous Itaballi Cataract which was alike conspicuous for its height and the large number of rocky boulders facing the force of the current. At a cataract of this nature there are only two ways of bringing the corials over the top, both equally tiring, if not always equally unsafe. But here both were combined. We had, for instance, only the choice of discharging the boats and carrying the baggage on our backs across the mile-long heaped-up giant rubble-stone which, owing to the extraordinary smoothness and inequality of the boulders, was as difficult as it was dangerous, or to haul the vessels over with ropes. The latter means was chosen. At huge falls like these the immense quantity of water that rushes headlong down over the dark cliff forms at their base large eddies and whirlpools into which the liberated element blusters into angry billows and engulfs everything so long as it can only seize it. A broad border of white foam indicates the limits within which the violent commotion of impassioned waves threatens danger. The boat is still swaying gently outside the treacherous area upon the water rolling peacefully from it—the crew has already left, and only the captain remains silent and rigid with the steering paddle in his powerful grip as he critically watches the piled-up mass of water. He once more tries the knot with which one end of a strong rope is tied into an iron bracket at the bow, its other being held in the hand of the best swimmer in the ship's company. These men suddenly jump into the torrent on the outer border of the whirlpool, rise up again, and carried by a side current, come up once more until after a long struggle they reach one of the exposed rocks. Yet the real fixed spot that they must try and gain lies still farther up, the dangerous dive has to be risked once more, the point is at last reached and a loud shout announces the victory. The captain now directs the bow of the vessel straight towards the wildest whirlpool and, while the swimmers are hauling on to the rope with all their might, does his very best to keep the boat in this direction. It is all right,—the top is reached,—the boat, still trembling, wobbles here and

---

†—The most prominent representatives included the beautiful *Machaerium leiophyllum* Benth., *M. nervosum* Vogel, *Antonia pilosa* Benth., *Aeschynomene sensitiva* Swartz, *A. paniculata* Willd., *Dioclea lasiocarpa* Mart., *D. guianensis* Benth., *Malanea sarmentosa* Aubl., *Licania coriacea* Benth., *L. divaricata* Benth., *Pithecolobium trapezifolium* Benth., several lovely *Inga* as *I. floribunda* Benth., *I. platycarpa* Benth. and *I. sapida* Humb. Bonp., *Swartzia grandiflora* Benth., *Hirtella paniculata* Swartz., *H. eriandra* Benth., *Tachigalia pubiflora* Benth.,—all of them, plants that I did not come across on the lower coastal reaches.

there as the captain steers it out of the real rush on to the crag, where the brave swimmers are stationed: these jump into it as quick as lightning, put all their strength into their paddles and try to cut through the stream that is rushing down with the speed of an arrow: this also is accomplished and the vessel, with whatever it contains, is saved. But woe, if on hauling the vessel up, the captain does not keep it in the right direction or if, on ploughing through the stream, the strength of the paddlers and his own ready skill are unable to withstand the strength of the current!—without any chance of escape the vessel shoots broadside down the fall and a few fragments emerging on the farther side of the foam indicate its destruction. Though the novice is already timorous when the corial is being hauled and his fear is ever and always increased afresh lest the knot should give, or the warp refuse to stand the strain, his anxiety is nevertheless first raised to its highest pitch when the boat reaches the top, the paddlers jump in, and their struggle against the strength of the current begins. In this struggle between life and death the vessel often stays still for minutes as if rooted to the spot, a cry of agony rings from out the anxious breast, every muscle of the contestants stands out prominent with its superhuman effort, the eye is steadfastly fixed on the threatening rock—for if the rushing torrent seizes the corial or drags it but an inch out of its course towards the destructive abyss, no power can then save it from being smashed to pieces. But the feeling of oppression is over, the paddlers have won, and the canoe is cradled safely in the fairway. I was only too often menaced to-day with many a similar anxious moment that makes all the difference between life and death, and yet this exciting method of proceeding, this furious combat with the element also had its interesting and extremely fascinating side. One lot of men can be seen here trying with truly admirable skill to swim to an exposed crag: the brown faces with their mouths just out of water on which their spread-out long black hair is floating, change their direction all of a twinkling, momentarily disappear in a foaming wave and finally burst into bright laughter when the slippery crust of the rock threatens to make its climbing impossible. But no one gives up the attempt until the very last man has secured a foothold: in the meantime, those that were the first to reach have already again ploughed their way through the water to a crag farther on, where the rope is now thrown to them with equal skill. Another party, cheerful and gay the while, bends under the heavy weight of the baggage and laughs at every false step on the awful road over innumerable rocks and rubble. The terrible uproar of the uncurbed current keeps our strenuous efforts company with its deafening din, the glowing tropical sun sheds its warmth over this wildly sublime scenery and forms thousands of rainbows upon the spluttering and bubbling waters, while the swarms of quizzing swallows in their zig-zag flight, the variously coloured processions of noisy macaws and parrots screeching through the air, and the humming-birds that, sporting like lightning sparks in the flower-calyces of *Tillandsiae* or *Clusiae* growing out from between the crevices of the rocks, constitute a scene as enchanting as it is attractive. This rich wealth of the most wanton natural conditions prevents all gloomy thoughts arising concerning the same dangers that threaten us on our return: the charm of the moment captivates the Present, and crowds out all sombre fancies of the Future. Wherever the eye turns it meets with fresh surprises. Here a mighty current rushes in between the rocky cliffs to disappear as if by magic into an unnoticed gulf: there a huge mass of water is ever on the whirl in a funnel-shaped cauldron formed of giant boulders. In the streaks formed of sticky mud that no downpour of rain, no amount of sunshine, can remove, these rocks show trace of the various water-levels for thousands of years past. Often a giant tree-trunk, long since dead, that has been brought and left here at high water, crowns one of these boulders until perhaps after the lapse of several years a yet higher flood carries it farther. On the washed-down earth in the rifts and clefts that only an exceptional flood can reach, there develops a luxuriant flora that covers the sombre rocks with the loveliest flowery garlands.† Hundreds of beautiful *Vochysiae* displaying their glowing yellow colours, and innumerable scarlet-red blossoms of creeping *Norantea guianensis* hemmed in the horribly wild and yet so enchantingly lovely scenery. I found a number of pretty snails, *Melania,* sticking on to the granite crags immediately below the surface of the water, but it would have been trouble spent in vain to search for a single undamaged specimen amongst the innumerable quantities,—all were mutilated, and several turns of the pointed whorls were broken off in every one.* Just as the rocks below were dotted with these molluscs, so were those above it, as well as the river-side trees, festooned with a similarly countless number of small bats. When approaching these animals and scaring them away, as the Indians particularly did very often, they suddenly flew off, rushed a few times here and there over the surface of the water, but then always returned back to the spot where originally found. I saw these wonderful creatures hanging head down not only upon the northern aspects of the trees and rocks, but also in full glare of the sunshine.

709. We did not, however, get over the Itaballi Falls without losing something, and our joy when all the boats, including the smallest, rode safe in the fairway beyond the top, was somewhat premature because the current demanded this very one as a victim. Fortunately, the corial only contained two barrels of pickled meat that had been left for ballast, and as the accident occurred before reaching the whirlpool, its captain, who was an accomplished swimmer, yet managed to save it. The provisions were of course lost, though we were very glad there had been no fatality and that we still had our boat, the loss of which would have put us in a tight corner.

710. Our hope of camping at some spot far remote from the dull booming of the Falls was unfortunately not to be gratified, for the

---

†—These include *Eugenia subobliqua* Benth., *Psidium aquaticum. P. parviflorum* Benth., *P. aromaticum* Aubl., *Couepia comosa* Benth., *Inga disticha* Benth.. *I. adiantifolia* Humb. Bonp., *I. umbellifera* De.C, *Chomelia angustifolia* Benth., *Amphymenium Rohrii* Humb. Bonp., *Drepanocarpus inundatus* Mart., *Leptolobium nitens* Vogel, *Hyptis spicata* Poit.. *H. Parkerii* Benth., *H. recurvata* Poit., *Gerardia hispidula* Mart., *Torenia parviflora* Hamilt , *Beyrichia ocymoides* Chamiss. Schlcht., *Bacopa aquatica* Aubl., *Melochia Zanceolata* Benth., *M. arenosa* Benth.

* From the hundreds which I have examined in varying degrees of destruction, I am inclined to the belief that the damage is due to organic, and not inorganic, causes. (Ed.)

shades of night were already falling fast by the time we had only reached the foot of the Aharo Falls with which the first series of the Essequibo rapids come to an end. It was impossible to negotiate these cataracts to-day, and having advanced barely four miles since sunrise in spite of the most determined efforts, we had to bow to the inevitable and pitch our camp on a sandbank at their foot. A boundless supply of the most tasty fish the Guiana rivers ever sheltered compensated us at least in part for the loss suffered in our provisions. This was the *Myletes Pacu* Jard., only found within the area of the falls because its favourite food, the *Lacis fluviatilis* Willd. and other *Podostemeae,* which the Indians call Weyra or Huiya, grow on the submerged rocks. Pacu is the Indian name of the fish.

711. As soon as the waters begin to fall in the river after the rainy season, the Pacu makes its appearance at the first series of cataracts, and the coloured people of the Essequibo and Mazaruni commence their fishing trips. When salted and dried on the rocky boulders, the fish constitutes a considerable article of trade in Georgetown. As nets cannot be cast in between the rocks, use is made of a bait, especially the fruits of the mucu-mucu (*Caladium arborescens*) which are thrown one by one into the stream: on the Pacu rising after the tempting morsel, it is hit by the never-erring arrow of the skilful fisher. A man who knows how to use his bow and arrow can easily kill from 80 to 100 per day. It is a strange phenomenon that below or between the falls of the Essequibo and Mazaruni one never finds the fry of the Pacu: the Indians and coloured folk explain this by the fact that during the rainy season when almost all the rivers overflow their banks the fish betake themselves to the savannahs of the upper Essequibo, where their eggs are laid, and then return to their long-missed favourite food on the granite dams of the cataracts. The fry does not appear to risk the raging waters of the falls and rapids until arrived at a size and strength sufficient to withstand the force of the foaming waves. Mr. Hilhouse, known by the account of his travels on the Mazaruni, says that there "By poisoning the water at the rapids I have come into possession of thousands of fish, partly Pacu, partly finger-long fry of other river-dwellers, but I never found Pacu among them that measured less than twelve inches."* This observation seems to confirm absolutely the statement of the Indians and coloured people. The female has a darker colouring than the male, and possesses besides differently constructed stern fins. While grazing on the *Lacis* and other *Podostemeae* it lies on one side, the most favourable position for it on account of the shape of its mouth.

712. Hardly had we arrived within the district where the Weyra grew, than the sharp eyes of our Indians and other boathands sighted the highly treasured fish, and as soon as we landed at the camping place, several good shots, whom I accompanied, hurried off in the corial with a view to supplying our supper table with a dainty dish. My people were quite

---

*Journal of a Voyage up the Massaroony in 1831. By William Hilhouse: read before the R.G.S. London 1833.

in their element here: the best of the lot took his place in the bows and hardly had his practised vision recognised the fish shooting past like lightning than the arrow was let fly, remained trembling a few seconds perpendicularly with the surface, and then disappeared. This was a sure sign that the animal must be of considerable size, because on account of its strength and speed only especially heavy arrows can be used in its capture. Everything now depends on not letting a moment slip when the arrow shows again: as this occurs an Indian ready to jump, immediately plunges into the water and seizes it; should he miss and it sink once more into the depths, fish and arrow are generally lost, particularly when there is a second rapid in the vicinity which it will attempt to reach and shoot with the current. Within a short while we caught seven, of which some were 20, others 27 inches long, and weighed from 5 to 10 lbs. Hamlet had taken all measures to prepare them as tastily as possible and his culinary skill was heartily appreciated.

713. Owing to the situation of our camp not admitting of Mr. Youd spending the night with us here, he had pitched his a short distance away. When evening fell, the singing of the Indians, with whom he every morning held service, was wafted over to us: suddenly dying away as if swallowed in the raging uproar of the rushing torrents, it just as quickly rang out again in voices bright and clear, until at last we only heard the dull thunder of the stream that sang us a wild slumber-song through the stillness of the night.

714. Anxious to be off by early sunrise so as to sling our hammocks in the evening on the farther side of Aharo, the last rapids of the first series, everybody was up and doing in our camp long before daybreak. Once over this first series we could then count on a smooth trip for at least a few days until the second series should offer new troubles and dangers.

715. We had left Georgetown with the entrance of the short rainy season and as far as the first rapids, had experienced its effects: these nevertheless appeared to constitute the meteorological change-limit of weather (*Wetterscheide*) for since yesterday hardly a drop more rain fell and the continuance of the loveliest weather favoured our journey up the Essequibo.

716. Having at last got over the Aharo Falls all right we proceeded peacefully and serenely up the Essequibo which seemed to have quite altered its appearance once more. Below the Falls it was covered with innumerable small islands: above them we everywhere came upon a number of more or less considerable sandbanks, which forced us to take a continual zig-zag course. I could quite understand the boathands' shouts of delight in which I joined with all my heart after we had crossed the falls: but I could not puzzle out at first the similar rejoicings with which the sandbanks were greeted until several of the Indians, before even the corials touched land, sprang impatiently into the river, swam to one of them, suddenly started scraping up the sand, and brought out a quantity of eggs. The laying season of the turtles had commenced, a time which the Indians look forward to with just as much gusto as do our German gourmets to the flight of the woodcock, or to the

first consignment of fresh oysters. Hardly had the remaining Indians noticed this than they all plunged into the water and followed suit. I verily believe their appetite was so keen that had the voluntary desertion from their ships been punishable by death, this would not have deterred them from swimming to the sandbanks that hid the tasty eggs. When I got acquainted with this celebrated dainty, I was able to appreciate their passion for it. What are our much vaunted plovers' eggs as compared with a turtle's? Although this delicacy has already been so often described with the liveliest admiration by those who have enjoyed it, why should I not add mine to these innumerable testimonials? Making its way from 80 to about 140 paces inland on these sandbanks, the turtle rakes a hole, deposits its eggs, covers them with sand and then returns to the water. The inexperienced European would exert himself for long in vainly searching for the eggs, while, in exploiting this treasure-trove for himself alone, he would gain but little without the assistance of the Indians: the trained son of the forest, however, is rarely deceived, and hardly ever removes the sand from a spot without immediately finding the eggs beneath. A slight wavy rise on the sandy flat betrays the situation of the nest, a sign that we did not learn to differentiate until it multiplied itself so often in the course of the days that we recognised isolated sandbanks the whole surface of which had a wavy outline. The white of the egg which does not harden by boiling, but remains quite fluid, is allowed to run off, only the tasty and nourishing yolk being eaten. Raw yolks mixed with sugar and a few drops of rum afforded us an excellent dessert that had a surprising resemblance to the finest Marzipan. Amongst the innumerable turtle which, during our river trip, were seen within the area of the sandbanks, I was able to distinguish but two species. The Indians called the larger one Casipan which is probably the *Emys Amazonica* of von Martius, and also seems to be the *Testudo Arrua* of von Humboldt. It rakes an often two-feet deep excavation in the sand wherein it lays from 100 to 120 round eggs supplied with a parchment-like covering. A smaller kind, probably *Emys Tracajá* of von Martius synonymous with von Humboldt's *Testudo Terekay*, lays but 18 to 19 oval eggs in a hole at most a foot deep. In the Amazon stream, Martius gives the laying season for October and November; in the Orinoco, according to Humboldt, it falls in March, whereas in the Essequibo, on the contrary, it commences with January and lasts at most until the beginning of February. This difference in the laying season certainly appears to be intimately connected with the varying commencement of the rainy season within the limits of the three river-basins, and Nature has instilled into these creatures that wonderful instinct whereby they deposit their eggs during that favourable period when the sun, before the entrance of the heavy rainy season, can still complete their hatching. The size of the young turtle is the surest indication to the Indians for the early or still delayed commencement of the tropical winter: for when these, after crawling out, hasten to the water, one can reckon with certainty that the rainy season is at hand. On the Orinoco this commences in the middle of April, on the Amazon in February, and on the upper Essequibo usually at the end of April.

Forty days after the egg is laid the youngster breaks the parchment envelope and slips out.

717. Besides turtle-eggs our Indians also now and again found some nests of the tasty lizard, *Iguana tuberculata* Laur., close to the edge of the forest. The eggs are much smaller than those of the turtle, and it only rarely happens that more than 14 are found in one nest: they surpass the turtle eggs by far and in Georgetown are delicacies very much sought after. The real laying season of the *Iguana* appears to fall at the end of October, because its eggs are found most abundantly at this period of the year.

718. After our boathands had gorged themselves with eggs we resumed our journey and soon recognised Gluck Island, some 5 miles long, rising ahead. The Caribs call it Aramisari Irupacu, a name that it has received from a small tiger-cat that was plentiful here in former days. Immediately opposite its southern spit, the Essequibo is joined by the Tipuri, its most important tributary we had met since the mouth of the Cuyuni. The generally characteristically flat banks below the first series of cataracts had already increased here to a general height of from ten to twelve feet: they consist of a mixture of sand and loam, which in some spots lie over one another in regular layers and have a light but generally fertile covering of mould overgrown with the most luxuriant vegetation. A trough-like cavity runs immediately behind and quite parallel with the margins of the banks: it is probably produced by the waters receding after the end of the wet season.

719. The extraordinary appearance of the high steep clayey banks aroused our undivided attention. The most suitable description to apply to this perforated wall would be a cullender: thousands of round holes of the most varied sizes dotted its flat surface, and I learnt from the Indians with not a little surprise that they contained nests of *Alcedo*, the kingfisher, and as a matter of fact all the species that I met on the Essequibo seemed to have established a hatching colony in perfect harmony here. I saw the *Alcedo torquata*, the *Alcedo Amazona* Lath., *A. superciliosa* Linn., *A. bicolor* Linn. Gm., and *A. Americana* Linn. Gm., slipping out of those holes, the size of which everywhere corresponded with the size of the species. As the holes were of considerable depth I could not observe whether the birds were still brooding: the continuous flying out and in of the old ones nevertheless led us to believe that they were already feeding their young.

720. Being New Year's Eve we could not think of spending it without the usual celebrations, it having proved a day of the most frightful anxiety, particularly for me, the year before. We accordingly pitched camp on a broad sandbank somewhat earlier than what had been customary at ordinary times. Regularly at 4 o'clock, for instance, we were accustomed to pick a comfortable place, so that, for a few hours before nightfall, the hunters could rove through the forest and the fishers make a haul which, ever since reaching the rapids and sandbanks, was never made in vain. As soon as the boats were tied and the crews released, each one went about his business: only within the limits of the sandbanks where everybody wanted to make sure beforehand of a supply of

turtle eggs for himself was this strict system somewhat relaxed. After this was done, and the eggs found, one lot hurried along the banks to cut posts for the tents, another looked for dry firewood—because Hamlet, the cook, would be extremely annoyed if, on his arrival, there was not sufficient on hand to light the fires for his pots and pans—while the hunters took their weapons, some of the fishers their bows and arrows, and others of them their fishing-lines which they cast at suitable spots. Suddenly the full round note of the signal-horn would sound and the men chosen for the purpose hurry to the corial with drinking-cups, pots and dishes, to fetch the rations of rice, rum, and so on, which on this particular day were distributed less carefully than usual: the boathands' cook would return with his heavily-laden ministering subordinates to the big cauldron under which a mighty fire already blazed, and his powerful stentorian voice, when the food was cooked, would call the scattered coloured folk to come and take their share: in short, order reigned everywhere, every move was orderly. For the rest, it is an extraordinary phenomenon that Indians of different tribes when associated on a journey never eat nor sling their hammocks close together, every tribe making its own separate camp so that when, later on, our companions included Warraus, Akawais, Macusis, and Caribs, we were surrounded with a little township where the residents were separated from one another into four areas. The blazing fires spread themselves out in all directions underneath the earthen pots which now contained an iguana, sometimes a fish, or again a monkey. Then, during the journey upstream or after landing, every Indian tried to add some special tit-bit to his rations: the salt fish on the contrary which did not seem to be appreciated, was only used in cases of extreme necessity. In fine weather the Indians and coloured hands contented themselves with fixing posts into the sandbanks and slinging their hammocks upon them or else upon the trees at the edge of the forest, but when rain seemed to threaten they rigged up at a moment's notice a number of small benabs which they covered with palm leaves, or leaves of the *Ravenala guianensis* Rich. One must himself have been witness of such scenes to be able to sketch an accurate picture of them: the hurry and bustle of the people, the primeval sublimity of the surroundings, the solemn darkness of the night and the cheering twinkle of the stars—everything is so combined as to give the whole a charm which is as artistic as it is bizarre. But the beauty of the spectacle is intensified when, through the veil of a somewhat clouded sky, the moon sheds her magic light over the landscape, to fringe the majestic stream with a silver border, and to bring into prominence the gloom of the sharply defined forest-clad islands, when the banks adjacent to the gentle ripples sparkling in the sheen sadly cast their darkened shadows far into the silvery water and form a glaring contrast with the blazing fires and Indian figures now showing up and now lost to sight. Such was the scene that met my gaze on the last evening of the year. The lively voices, the ringing songs of the coloured people, and the outbursts of laughter were stilled, the busy figures disappeared, the fires died out, and a dead calm spread over the previous activities of the camp. Other voices then awakened in my vicinity: for closely following on the happy celebrations there fell upon my ears the agonising cry of suffering from the different species of goat-suckers which, perched upon the bare exposed branches of trees sunk beneath the water, voiced their groans of lamentation across the silence of the moon-light night. These dull notes are indeed so melancholy and uncanny that I could quite understand why people fight shy and are so afraid of these creatures: no Indian, no Negro, no creole of the coast dare point a gun at these birds, in which the first recognises the servant of the Evil Being, Yawahu, and his sorcerers, the second the messengers of the bad spirit Jumbi, and the third the certain prophecy of a death within the house, as Waterton* has so charmingly described in his "Wanderings." Now I recognised from yonder trees or from the neighbouring waterside the wailing "ha-ha-ha-ha-ha-ha" that commenced with a clear full note and gradually died away in a sob, and then the "Who-are you, who, who-are-you?" uttered in anxious haste, and now again the dull imperious "Work-away-work-work-work-away," while in the next moment a voice, replete with the utmost weariness of life, implored "Willy-come-go-Willy-Willy-Willy-come-go," and a fifth wailed "Whip-poor,-Whip-whip-whip-whip-poor-Will," until suddenly the piercing shriek of a monkey that had been disturbed in its sleep or caught by a tiger-cat rang out from the gloomy forest. Wakened by the death-cry of this creature its mates joined in the wail of agony, the whole forest rose in tumult, and one heard the jumping of the frightened pack from tree to tree, till this hubbub likewise gradually faded away into the distance and the upset in the stillness of the night subsided. Up to the present I had listened quietly to these different sounds, and watched the flight of owls and bats swaying over the surface of the water, but now a long drawn-out uncanny growl frightened me out of my reveries, and as it seemed to indicate the presence of a jaguar on the prowl, I hastened to wake my neighbour. The terribly menacing roar which re-echoed a thousand times in the forest confirmed my fears when, awakened by my call, a number of the sleepers jumped out of their hammocks. New Year's morning showed us distinct tracks upon the many different paths along which the fearful creature must have prowled round our camp.

721. After commencing the day with Divine Service in the course of which Mr. Youd gave us an excellent sermon exactly suited to the occasion, we spent the rest of the time in fishing and hunting. I have already considered worthy of praise the certainty with which the coloured folk and Indians, in spite of the optical illusion caused by refraction of the image, manage to hit the fish, and will now only describe here quite a peculiar arrangement as regards their arrows with which fish other than the *Myletes* are killed. These arrows carry a powerfully barbed tip, possessing a hollowed-out base into which the extremity of the arrow-shaft passes. A thin but strong string is attached at its one end to this iron tip and at its other to the shaft, on to which,

---

* "Wanderings in South America," by Charles Waterton.

however, it is lightly wound. As soon as the creature is struck, the arrow-tip remains where it is, but is released off the shaft, from which the string at the same time becomes unrolled, when the fish dives below. The shaft floating on the surface of the water shows where the catch is hiding. The Caribs and Macusi Indians call this kind of arrow Sararacca. Equal dexterity is also exhibited in the use of fishing-lines. As each species of many of the fish generally requires a particular bait, the Indian, after gazing with critical eye at the occupants swimming here and there below, throws out his hook, supplied with the very bait that the fish which he exactly wants for his table is especially partial to. A rod is only rarely used for the purpose. With practised hand he throws his line and now feels every nibble till finally a stronger tug tells him that it is time to pull on it. In the still water where the banks have a steep slope, particularly in those spots where its surface is strongly lighted up with the sunshine, were usually found collected a number of beautiful sunfish, the Luganani of the coloured people, *Cichla ocellaris* Bloch., *C. argus* Humb., which seldom escaped the arrows of the Indians. A peculiar practice for attracting fish consists in this that when the fishermen use a rod and so throw the line into the water, they whip the surface many times with it. The fish seem to take this noise for fruits falling from the trees and will snap greedily at every object they meet. Our German anglers would be afraid of such a noise frightening them away and, judging from the piscatorial experiences of my own youth, they would not be far wrong. Probably the American fish are less smart than the Teuton ones! Extra excitement was afforded in camp every time one of the giant sweet-water fish, a Laulau, or some large sheat-fish was caught on the night-lines: for the rest, it required special skill to land the ungainly creature. Several of the Siluroids, particularly the Pacaruima (*Phractocephalus bicolor*), make a noise as soon as they are pulled out and then, with thick clubs, done to death: this sound is so peculiar that one can even distinguish at a distance whether the catch is a laulau, a pakaruima or some other species of *Silurus*.

722. During the afternoon while strolling along the riverbank with some Indians, one of them drew my attention to an object on the opposite shore: I took it to be an old tree trunk, but on my sharp-sighted hunter jokingly advising me with a smile to bring out my "second eye" (pocket telescope) I recognised it to be a huge kaiman, which was warming itself in the scorching sun. A hunting party was quickly made up: the small boats soon emptied of their baggage, manned and freighted with rifles, guns, and pistols: we divided ourselves, one corial was to go upstream above, and the other to cut across below the brute. Although the Indians again chaffed us about our preparations and suggested our staying quietly where we were because the kaiman was far too smart and would certainly make its escape, they did not deter us from our purpose. Zeal added wings to the paddlers though to our great disappointment the reptile slowly withdrew into the water as we got to within 300 paces of it. I often had the opportunity subsequently of watching the same shy timidity of the kaiman on land.

723. On the morning of the 2nd January we resumed our up-river journey. The next island that we came to was Hubucuru, where the river had a width of 1,520 yards, just as at the same time the Arissaro Mountains came into view towards South half-East. The Cortuahara and Mucu-Mucu empty themselves into the Essequibo, on its eastern bank from which a much frequented trail branches off in a south-easterly direction to station Seba on the Demerara which must be about 20 miles distant as the crow flies.

724. If in times to come the opening up of the country should advance farther inland, the Cortuahara and another small stream, the Coreta which flows into the Demerara, would then offer the most suitable highway† of civilisation: the dangerous obstacle of the Itaballi Rapids could thus be avoided.

725. The luxuriance of vegetation that had already become apparent after passing the Aritaka Falls, aroused my keenest admiration on approaching the Arissaro Mountains. Just as on the upper Barima, an almost impenetrable virgin forest reigned over the whole, and behind the immediate hemmed-in river edges that, in the most delightful play of colour, formed truly picturesque patches of foliage, there rose hill upon hill, each of them draped with the vast wealth of a profusely tropical growth, and shaded by *Mora excelsa,* those giant *Mimosae* of the torrid Zone. We gazed on this glorious picture with the deepest wonder: Oh, what a charm would be cast over our northern landscapes by such a group of trees with their changing tints of foliage! Oh, for only a patch of forest composed of *Mora excelsa,* the leafless *Jacaranda procera* Spr. with its numberless blue blossoms, the stately *Martia excelsa* Benth. and its dark yellow floral embellishment, all associated with the delicate yellow of the *Vochysia guianensis* Aubl. interwoven in the glowing red of *Elisabetha coccinea* Schomb. with the scarlet enamelling of the climbing *Norantea guianensis* and threaded by all the ravishing colour-tints of numerous *Bignoniaceae* and *Passiflora*! Each stroke of the paddle brought new and more surprises* before my astonished gaze: every bend unfolded a fresh and more delightful picture before my enraptured vision, while every tree, every bush, every blossom seemed to say "Stranger, keep our memory green: in fairy fancy ever free take us with you to your homeland where the blossoms of our brothers droop beneath the winter's icy breath, and when the cold ingratitude of Life destroys the many hopes you set upon your Future, fly on the pinions of remembrance back to us!" Yes, even to-day the memory of those times of inexpressible enjoyment still abides within my inmost soul along side the full fascination of the Present, and serves to brighten many a sorrowful hour. Not only did the vegetable world alone unfold its

---

† Compare the site of the present Demerara-Essequibo Railway.—(Ed).

* Among those still partly unknown to me and to Botany in general I would mention but a few: *Calynthrantes obtusa* Benth., *Clidemia elegans* Don., *Outea acaciaefolia* Benth., *Cassia moschata* Humb. Bonp., *C. bacillaris* Linn., *C. flexuosa* Linn., *C. latifolia* Benth., *Spennera dichotoma* Benth., *S. disophylla* Benth., *S. latifolia* Meyer., *Lisianthus gracilis* Griesb *Hibiscus bicornis* Meyer., *Paronia typhalea* Car, *Aeschynomene ciliata* Vog., *Chrysobalanus pellocarpus* Meyer, etc,

wonders, but the most brilliant and interesting representatives of the sister one likewise had their homes here. Several species of Jacamar (*Galbula*) among which *Galbula grandis* Lath., and *G. flavirostris* were specially conspicuous, were to be seen perched upon the overhanging branches of mighty trees with an air of silent contemplation until the close approach of an all too daring or imprudent insect would make them fly off as quick as thought, only to return with it to their previous roost. The red-polled *Tanagra gularis* Linn. hopped busily and sprightly through the bushes overhanging the water. The less the *Galbula* let itself be disturbed in its pensive meditations on the approach of human beings, the more shy and cautious was the Snake-bird (*Plotus anhinga* Linn.) for which reason it only rarely happened that a hunter could get within gunshot. It usually picks a spot upon trees which, undermined by the water, bend themselves far over the stream, a standpoint whence it can observe its would-be captor just as well up or down stream and so can fly away long before he can come within range. As the appearance of the slightest object upon the otherwise unfrequented water already claims its attention a long way off, I based my method of catching it upon this everlasting watch that it set upon our corials. When at last I saw the *Plotus* in the far distance I climbed on to the land where the bank permitted of my so doing and sneaked on to it slowly and cautiously all the time that its attention was directed on the corials until it knew by the shot that it had been outwitted: but even then I only got possession of the bird if it were killed outright. Were this not the case it rushed itself with the speed of an arrow into the water, dived below, and was only rarely to be seen again. It usually swam below the surface of the bushy bank, where it stuck its pointed bill and little head with brilliant eyes warily out of the water, but immediately ducked again if it did not think the coast clear: it prudently remained always within cover of the overhanging bushes where it rightly felt itself safer than in the open. When swimming after its food, it is only the thin snake-like neck and small head that are exposed: this continual movement of the head as the creature cuts its way through the smooth water forms quite a peculiar sight. Equally as skilful divers as the *Plotus* are the ospreys (*Carbo* Lac., *Halicus* Ill.) that are indigenous here. We frequently found whole flocks of the scissor-bill (*Rhynchops*) perched together upon the immediate river-edge of the sandbanks, or else flying in long rows one behind the other just over the water, the surface of which they would be ploughing up with their sharp bills. It was a surprise to me to find this coastal bird so far inland: I met with it still even on the Rupununi. The sea-swallows, *Sterna magnirostris* Licht., judging from their nests that the Indians found on the sandbanks, were likewise plentiful here: in no nest did we find more than two eggs which were the size of that of our plovers.

726. On January 5th we reached the 600-foot high Arissaro Mountains which we had already seen in the distance the day before. They stretch from East to West and belong to the granite series: some 16 miles farther on the approximately 200-foot high granite chain of the

Yaya*, making its way along the eastern bank, diverts the river, coming here from the West, entirely to the North, the course of which it follows some 40 miles throughout. The two rivers, the Demerara and Essequibo, are at their closest here as the intervening distance must amount to only about 8 miles. Five miles farther up we hit the approximately 200-foot high granite chain of Oumaia, which again deflects the river to the eastward, forming here the sharpest bend in its entire course.

727. The pleasure which the smooth and tranquil stream with its wildly romantic and fertile banks had so far afforded us, was unfortunately to be soon dimmed. Hitherto, the charming riverside scenery with its 80 to 100-foot high wall-like fringe of vegetation, exactly resembled a giant hedge trimmed with shears, where, in addition to the creepers previously mentioned, one could distinguish the beautiful *Petrea volubilis* with almost foot-long flower-bunches, the glorious *Clitoria Poiteaui* DeC., *Echites insignis* Sp., *Phaseolus lasiocarpus* Mart., *Securidaca marginata* Benth., and *Cacoucia coccinea* Aubl., while the resulting fairy flower-carpet beamed with all and every colour in which the pretty *Calyptrion Aubletii,* together with the new species *C. nitidum,* and the equally new *Combretum aurantiacum* Benth. stood pre-eminent. Now, however, the view soon became changed again into its former one of chaotic confusion of wave and rock. The menacing thunder of the second series of cataracts of Cumaka and Akramallali also resounded from the far distance through the virgin forests. We managed to get over them all right and picked a camp on an island that was so thickly covered with pine-apples that cutlass and axe were necessary to clean up a free space. The long saw-edged leaves formed at all events an impenetrable thicket as if intended to protect the small miserable looking but usually aromatic fruits; though, in spite of this, the largest proportion of them had been eaten both by insects as well as by marsupials (*Didelphis*) and proboscideans (*Nasua*).

728. On the following morning we passed the Potaro which discharges its dark brown waters into the Essequibo from the South-West. It also must be uncommonly rich in rapids and is only separated from the Mazaruni by a small portage.†

729. Continuous thundering and white foam-flakes flowing on towards us betokened a new cataract, and there soon rose ahead a truly confused scene of granite boulders lying one over the other, the surfaces of which were covered with a thick crust of black brown-oxide of iron. The rocky dam crosses the river from North-East to South-West and thereby connects at the same time the two arms of the Curamucu Range which stretch towards both banks and rise to a height of 1,200 feet. We also managed these falls without any loss. But hardly had we caught our breath again than the hateful noise threatened us anew, and a few mischievous foam-flakes came to meet us like harbingers of fresh danger.

---

* The Arisaru Range consists of diabase, not granite, although some granite is seen at the foot of the range near the water edge. The Yaya Hills are diabase. (E.E.W.)

† It was not until 1870 that Barrington Brown reported the existence of the grand Kaieteuk Fall in the Potaro (Ed.)

Benhuri-Bumocu Falls were now also crossed without any damage and upon the southern point of Benhuri-Bumocu Island, in 5° 17′ lat. N., we found a longed-for rest. Mr. Youd had already left us yesterday to hurry ahead with his boats to Waraputa Station and receive us there. After landing, the coloured men told us that in the neighbourhood, in fact on the eastern bank, there ought to be a small settlement of Arawaks over whom a European, by the name of Smyth, had presided as chief for several years past, and hence the reason for calling it Smyth's place. They described this man as an absolute villain. Formerly a merchant in Georgetown, he had committed such mean frauds and rogueries that he had been banished from the city and declared an outlaw. He retired up here to the regions of the upper Essequibo, obtained a footing in the settlement, and through his extraordinary cunning acquired such a reputation for himself that, upon the death of the chief, he was chosen successor. Amongst other things that he had brought away on his flight from Georgetown was a number of knives, hooks, axes, etc., and these, before his entrance into the camp, he had buried in the forest. After now spending a considerable time among his hospitable friends, he proclaimed that the Great Spirit had appeared to him in a dream and had shewn him a spot where all the tools that they required would be found: what he told them was confirmed and the harmless children of nature willingly bowed down to his absolute sway. He had tried to prevent the development of the neighbouring Waraputa Mission in every possible way: with his dependents, he had destroyed its fields of a night and had raised every means of inciting the neighbouring Indians against the new Institution. He had even threatened to burn down Bartika Grove and it was only through the watchfulness of Mr. Bernau, to whom someone had betrayed the plan as well as the night fixed for its commitment, that the crime had been frustrated. Smyth's settlement seemed also to stand in sufficiently evil repute among the other Indians and was carefully avoided by them.

730. We were fortunately able to escape the most dangerous of the Waraputa cataracts by means of a side channel and, rejoicing over the luck that had remained faithful to us up to now, we landed at Waraputa Mission where we were welcomed by salvoes of all small arms available and capable of being fired. Mr. Youd had already reached yesterday. It rises upon a 40 to 50-foot high granite bed extending about a mile wide on the western bank of the river, situate 5° 15′ 13″ lat. N. and 58° 47′ 26″ long. W., which at the same time constitutes the little Waraputa Fall immediately below the Mission. When my brother travelled up the river in 1835 the Waraputa settlement was already there with 50 residents, Carib and Akawai, under the rule of chieftain Cambori: at the present time it numbers 30 houses and possesses a small church built of clay and embellished with a tower, that Mr. Youd has had erected by his wards since he was driven away here from Pirara. The two-storeyed residence of the courageous missionary stood upon a projection of the rocky hill and, with the exception of the weatherside, was built of split trunks of *Euterpe oleracea* and surrounded by a gallery. Below this building, the wild raging element with its foaming and destructive eddies

forced its way through the rugged rocky boulders and cliffs. Farther up a real labyrinth of thickly forested islands spread a green coverlet, streaked with silver bands, over the whole river bed. Surrounding the house itself was a flourishing fruit- and kitchen-garden where, together with European plants which under this foreign sky reached a perfection unknown in the homeland, the indigenous pine-apple reached such a truly immense size that, unable to support the huge golden fruit, the weak stalk had to be supported. The bird-spider (*Mygale Blondii* and *M. avicularia*), a creature of repulsive appearance, had chosen the pine-apple leaves for its quarters and on almost every plant one recognised the small muslin-like thick web with its hateful occupant: I doubt whether the spider really devours humming-birds, because in this robber's castle I never found a trace, not a feather of one.

731. Mr. Youd's community consisted of Caribs, Macusis, Paravilhanos and some Brazilian soldiers and Vaqueiros (cattle-men) from the Rio Branco who had settled here. The delightfully inviting appearance of the houses, the exemplary order and cleanliness that reigned over the whole village, and all the happy and contented faces of the converts produced an exceptionally favourable impression; deeds proclaimed more loudly than words the love enjoyed by Mr. Youd and how blessed had been his influence. The larger number of the residents consisted of Caribs. Some Macusi families who had settled here a short while before, could be distinguished from these, not only by build of body but particularly by the absolutely different patterns with which they had painted their bodies: the females had paid a truly minute attention to their lines which were always broken up at right angles and interlaced. The women wore their beautifully full and shiny hair, kept clean and tidy, hanging a long way down over the neck and shoulders: the men on the contrary in most cases had it cut short. Immediately above the ankles and calves, as well as above the wrists and elbows, the legs and arms of the women and girls were wound with strings of beads a hand's-width broad.

732. Mr. Youd told us that one of the three Indians who had accompanied my brother to London in 1839 and spent a year there had come and settled here on his return. But Sororeng, a Paravilhano, had not let himself be seen and my brother was just about to express his surprise when, all of a sudden, we saw coming from out of one of the houses a fine adult barefooted man wearing a long overcoat buttoned all the way up, with his somewhat short neck tied in a high cravat, his head covered with a felt hat, and legs clothed in black trousers. Dripping with perspiration he hastened to my brother with an expression of the most heart-felt joy, and hardly knew in fact whether he ought to express his feelings at once more seeing my brother in exactly the same way as the latter received him: he seized his hand, then stood in front of him, watched him long and attentively and then turned suddenly round, hurried back to one of the houses and brought out a young woman whom he presented to my brother as his wife. He told him that Saramang, the Macusi, who had also been to London, died soon after his return from Europe. Having again declared his intention of also coming with us on

our present journey into the interior, my brother willingly accepted the offer, because he not only spoke English and Creole Dutch but, in addition, knew three different Indian languages: that this desire of accompanying us on the trip had nothing whatever to do with the spontaneous emotions resulting from the mutual greeting was proved by the enduring attachment of this faithful fellow up to the very last moment of our stay in Guiana.

733. His people had lost all faith in honest and upright Sororeng after his journey to London. As he often told me afterwards, "They take me for a damned liar, for when I told them that over there are to be seen animals even larger than jaguars and cows, and I had seen for instance, an immense Long-nose (elephant) and a Long-neck (giraffe) which were as large as a house, my friends got up and left me. Since then," he added "I rather tell them nothing more, because they would not believe me at all." Sororeng was one of the few survivors of the once very powerful tribe of Paravilhanos whose district extended into the environs of the Rio Branco.

734. Since no more settlements were to be expected on the banks of the Essequibo, we spent six days here to obtain sufficient supplies of cassava bread and at the same time to send back one of the smaller corials to Ampa, under the captaincy of a coloured man, to fetch the things we had left behind, Mr. Youd lending us one of his boats to replace it: some of the Indians from Waraputa were engaged to paddle it down. Mr. Youd wanted to wait for the arrival of the military expedition at Waraputa and join it there.

735. I was very pleased with the school instruction as carried out by Mr. Youd's assistant, who ran the mission by himself after his principal's departure. Amongst the children who were being taught I found a little Macusi girl five years of age who read and wrote quite correctly. Mr. Youd shared Mr. Bernau's conviction that it was almost impossible to teach the older Indians Christian morality and keep them civilised: in the minds of the young generation on the contrary, the scattered seeds found a fruitful soil and promised the most beautiful fruit. I often had many a talk with Mr. Youd over his blessed sphere of labour and believe that his band of youthful pupils, though small, yet imbued with the elements of the true religious spirit and education, would put to shame many a missionary who advertises in unctuous speech, *e.g.*, that "so many souls have found Salvation, that so many can say 'Our Father,' that so many know the Christian belief, etc.," but fails to add that this is only a matter of speech expressed with the lips, of which the heart is totally ignorant. Mr. Youd could certainly not speak of the thousands he had brought to Christianity, but he surely could do so of a small throng who, through his agency, really received the blessings of the Gospel and had learnt to appreciate the higher sentiments. His beautiful and true adage was: "The way to do it is *not* by just *saying* Lord, Lord!"

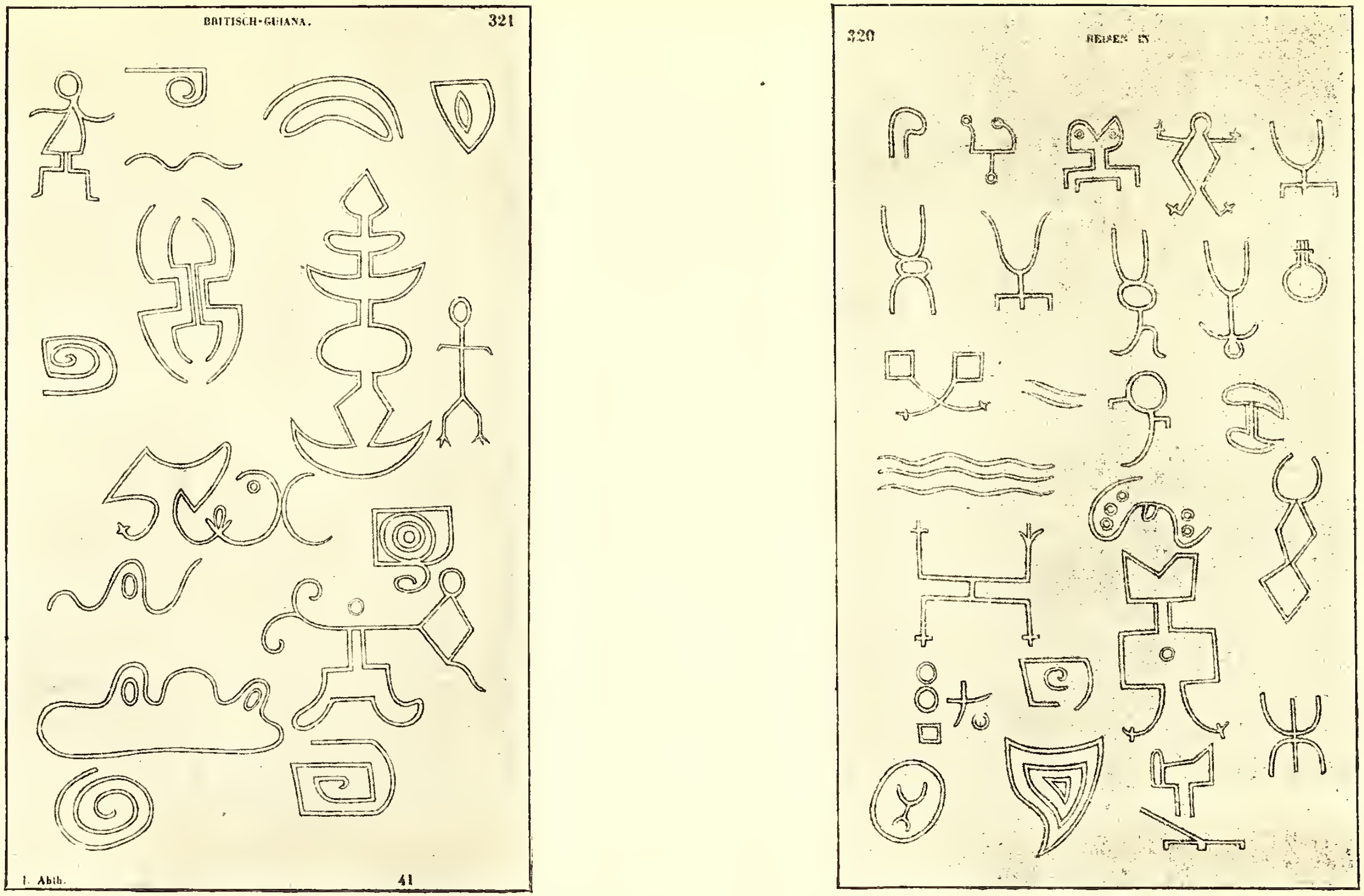
736. We all attended the Sunday service which must have proved a trying ordeal for the brave missionary, for he held this first of all for us in English, then for the Macusi Indians in their own language, and

lastly in Creole Dutch for the benefit of the Brazilians and coloured people. A horn instead of a bell called the congregation to church, where split trunk-stems formed the benches, and neither glass nor shutter closed the window-spaces, and I must admit that it formed a strange spectacle when this small band of worshippers in diverse coloured costume, or only half covered, took their seats in this simple edifice. Only a few were entirely, the greater number hardly half, clothed. Without altering their countenances in the slightest degree, they all sat in the little chapel like statues, with their eyes directed steadfastly on the missionary. As there is but little singing, according to the ritual of the English Established Church, the frequent pauses in the liturgy were filled by the help of a barrel-organ that played several choral melodies, until the soft and melodious strains of the devout gathering again chimed in. The chieftain of the village, the Carib Irai-i, the last descendant of the once notorious Kazike of the tribe, Mahanarva, sat dressed in blue on a seat in the middle of the church. Irai-i still possessed the gold half-moon shaped sign of sovereignty of his dreaded ancestors. Curiosity had also attracted our Waikas and Warraus from the Barima and Waini into the building. Everything that they saw and heard here was new: they watched the preacher's every movement with the most strained attention and were visibly affected by the sounds of the barrel-organ and the singing, yet when Mr. Youd commenced his sermon, which to me seemed somewhat too prolonged, their interest flagged, and they started turning their impatient looks towards the door. As we sat immediately behind the pulpit we were able to survey and accurately observe the whole gathering. The first to show signs of restlessness was one of the Waikas from Manari: he seemed unable to stand it any longer. When Mr. Youd turned his gaze from off the spot where he was standing, he also cast his towards the door, though the large number of people in between and an innate feeling of propriety must have convinced him that it was impossible to gain freedom by that way without occasioning plenty of disturbance. The open window offered an easier and surer means of escape, so quickly making up his mind and without taking his eyes off Mr. Youd he commenced moving sideways in its direction almost unnoticed. Whenever during the harangue the preacher looked his way the wily Indian suddenly stood stock still. He finally reached the longed-for goal, the window raised some six feet from the ground, and at a favourable moment, on Mr. Youd turning to the side opposite, made a bound for liberty. His movements were carried out so slyly, and the jump through the window so rapidly effected that Mr. Youd did not have the slightest idea of his escape. It can be easily understood that we could hardly refrain from laughing and only felt all the more stimulated to do so when the rest of the Waikas and Warraus followed their leader with equal cunning, and Mr. Youd at last noticed our excitement. The remainder of the congregation however showed no signs of disturbance, but watched the proceedings without a change of countenance. When after the conclusion of the service we informed the brave missionary of the cause of our restlessness, he assured us that he had not noticed the disappearance of his hearers at all. and yet seven of them had made their exit through the window.

737. After church we visited the pleasant and extensive fields surrounding the village. Each house had its own piece of arable land which the family worked for their exclusive benefit. A large area was cultivated by them collectively as common property, the profits of which went to defray the expenses of the Mission. The soil must be unusually fertile: I had never yet seen cassava in so flourishing a condition. The ground consisted of a rich layer of clay in which granite rocks made their appearance everywhere.

738. On returning from our stroll a dog belonging to the chieftain Irai-i that had been bitten in the forest by a labaria (*Trigonocephalus atrox*) under the right eye occupied our whole attention. The poor creature must have suffered terribly judging from the piteous way it whined: shortly after, it could hardly be recognised, the pointed head of the greyhound having swollen into the downright massive one of a lion. Proximity to the fire seemed to alleviate its sufferings, the tormented creature regularly raking up the ashes with its snout.

739. Next morning we took a corial to visit the Great Waraputa Fall which is of considerable interest not only on account of its grandeur but also for the large number of hieroglyphics and sculptures hewn in its rocks, since one can recognise in them traces of a by-gone age which unmistakeably indicate a higher degree of culture of the aborigines in previous times, a view that is held by the most competent authorities. It is shewn historically that the Spaniards on their discovery of America found this new continent occupied by a race of men who both as regards physical features as well as intellectual faculties differed from all other nations of the world as it was then known, while on the other hand it shewed within itself such a general racial correspondence in bodily-frame, manners and customs, that it must have been consequently all the more surprising to see the great family split up again into innumerable tribes with languages differing completely from one another. How then, one might at all events ask, amidst this general racial similarity, did the change of language, the medium of mutual understanding, come about? According to the erudite researches of a certain Wilhelm von Humboldt Sr. and others, at least 500 different languages are distinguishable in America. Humboldt ascribes this alteration of language partly to the very variable surface-conformation of the country, partly to the dividing barriers of vegetation. Of course, so long as all the many peculiarities of expression are limited to verbal transmission, and are accordingly subject to corruption, nothing definite can be decided about their structure and as to how closely or distantly they may be related: nevertheless there is fairly good reason for believing that in spite of the verbal transmission there exists in all these languages a certain grammatical analogy and resemblance of structure which gives all the more probability to the assumption, that notwithstanding all the extraordinary differences of dialect, they have all had a common origin. Whether now the occupants of America are really autochthonous and of the same age as the surface-conformation of their portion of the earth, or whether


BRITISCH-GUIANA.
321
I. Abth.
41
320
REISEN IN

SOME OF THE SO-CALLED "HIEROGLYPHICS" AT THE GREAT WARAPUTA FALL.

they are of Asiatic origin as has been claimed, certainly cannot be proved with certainty in the complete absence of historical data. The belts of hieroglyphics that we find extending through the whole of South America and North America as far as Behring's Straits into Northern Siberia, the characters of which so unmistakeably correspond with one another, might at all events make the peopling of America through Asiatic hordes more than probable, especially if we further take into account the resemblance of the whole physical features of the Indians to that of the Mongolian tribes of Northern Asia. These fugitive suggestions may suffice to draw attention to the importance underlying these old inscriptions which we found in the course of our travels along the most different degrees of latitude, not only in the river valleys but also on considerable heights. Upon enquiring from the natives as to who had made them we everywhere received the reply: "Our forefathers when the immense waters still covered the earth and they navigated the mountains in their corials."

740. The Great Cataract lies to the South-East of the Mission, and after avoiding some of its many channels, one of them carried us to its foot. The Fall was undoubtedly one of the most sublime I had hitherto seen. The mass of water rushes down a 12-foot high perpendicular rocky wall while at the bottom of the fall the huge granite boulders, completely covered with those wonderful figures, everywhere emerge from out of the black rocky cauldron like swimmers who have lost their way. The hieroglyphics which are even still incised to a depth of from $\frac{1}{4}$ to $\frac{1}{2}$ an inch in the hard granite* show no trace whatever of symmetrical proportions, many of them measuring not quite a foot while others on the other hand go up to over two feet and more. Besides several representations of human figures, including also some of animals, there is in particular a repetition of spiral lines which, only differing in size and with some slight modifications, are very like Semitic language-signs. The Macusis accompanying us called this picture writing Taemong-kong, while they described the marks upon their bodies as Imeun-casa. If one bears in mind the hardness of the stone and the further fact that on the discovery of America the inhabitants knew as little about iron as the tribes of the interior do at the present time, it must be assumed that many years were required to cut these markings to such a depth, unless it is to be suggested that they testify to a long-past higher state of civilisation during the pre-historic period of the Continent.

741. We did not find the hieroglyphics mentioned by Hortsmann in the Rupununi although we searched the river practically from end to end, while the Indians from whom we everywhere enquired, knew nothing about them. On the journey to Roraima we discovered a new series that were cut in a sandstone mound: these differed in many respects from those at Waraputa, but seemed to resemble instead those which Alexander von Humboldt found on the granite rocks of Caycara on the Orinoco, and Culimacare on the Casiquiare. The singular spiral

---

* There is a diabase dike in the granite at Waraputa. Prof. Harrison states "the intrusive rock is covered in places with rude prehistoric figures of the kind known in the Colony as Timehri writings." (E.E.W).

figures interlacing with one another were here entirely wanting: in their place a number of crude pictures of snakes, crocodiles, suns, moon, and stars covered the surface which was unfortunately already much weathered.

742. As it perhaps might be interesting for many of my readers to possess a faithful copy of this picture writing, I have subjoined some of the figures from Waraputa Fall (p. 249.)

743. The vegetation of the islands almost generally consisted of *Psidium, Eugenia, Inga,* and *Mimosa.* Here also the granite rocks shewed that black glassy covering and were astonishingly often veined with quartz.

744. Shortly before our arrival in Waraputa a number of Macusi Indian strangers had landed at the Mission on their way to Georgetown where they wanted to exchange the fruits of their labour for other articles. Amongst them was to be seen a poor boy of from ten to twelve years of age who was suffering from dropsy in its most advanced stage: as his condition was hourly becoming worse it was necessary for the party to await here its fatal termination which took place four days later. Kanaima was, of course, responsible for the death. In the demonology of the Macusis, Akawais, Wapisianas, and Arekunas, this kanaima plays quite a peculiar part. It appears to be not only the personified desire of man's revenge but in general the author and source of all evil, yet without developing into a distinct individual Evil Spirit—to put it shortly, it is a Proteus without definite shape and fixed conception. In spite of our long stay with the Macusis, amongst whom this religious belief is found most cultivated, we did not succeed in getting a clear insight into this kanaima, since he is represented both as an evil invisible, demoniacal essence and also in many cases as an individual personality, though always in the nature of the avenger of known or unknown wrongs. Who and what Kanaima is they could never tell us, but they explained every death as his effect, his doing. Out of all the confused conceptions, this much seemed to me to stand out clear that the manner and method by which the Indian satisfies his revenge—for he never approaches his transgressor face to face, but seeks to overcome him by ambush, and satisfy his vengeance by guile—is the chief creative cause of this delusive belief in kanaima which, like an oppressive nightmare, everlastingly pursues his every act and deed, makes him bar the door at the day's close, and induces him to believe that he recognises its presence in every unusual noise of the night. I have already mentioned among the Warraus the thirst for revenge that often rules the Indian and drives him mad as soon as he considers himself injured in his honour or in his wife: a passion that is not quelled until satisfied by the death of the offender, even by the extermination of his whole family. As I also mentioned, the one who seeks revenge does not come out into the open but springs warily yet unfailingly from out of hiding upon his victim, just when the latter imagines himself most secure. Every poison, except arrow-poison, is kanaima, a name that is likewise applied to every Indian against whom it is known that a wrong has been done. Wassy is especially included amongst the poisons that prove most

disastrous in their effects. It is prepared out of the bulb or tuber of a plant which, in spite of my efforts, I never got acquainted with, because all requests, all promises of a rich reward for a specimen, remained fruitless: the Indians maintained that if they once betrayed the plant to the Paranaghieris the latter would immediately find its antidote. They cut the tuber into thin slices, dry it in the sun, and then pound it with the greatest precautions into the finest powder which has quite the appearance of arsenic. If revenge drives the Indian to become kanaima, he follows the victim like a snake which, continually winding its way amongst the leaves never lets him out of sight, ready at any moment to make the fatal spring—until he finally succeeds in surprising him asleep. He now sprinkles a small quantity of the powder over the sleeper's lips or under his nose so that he may inhale it. An intense burning in the intestines, wasting fever, tantalising thirst that cannot be stifled by any means whatever, are symptoms of the poisoning which gives the victim the terrible knowledge that his days, yea even his hours, are numbered.* Within four weeks the sick man is reduced to a skeleton, and dies in the most frightful agony. If the kanaima does not succeed in satisfying his revenge in that way he alters his plans, drops all idea of ambush or waiting on the chance of catching his victim innocently asleep, and tries to gratify the one desire that night and day haunts his soul, by cultivating a pharisaical friendship. But if even by this method, by dissimulation, or hypocrisy, his would-be victim's mistrust and fear of revenge cannot be dispelled—then the kanaima suddenly disappears from out of the village and no one knows where he is to be found. Without rest, without repose, and goaded on by the one burning desire for revenge that ever more and more inflames his breast, he strides through the forest up hill and down dale, and does not return until he has killed his man or wounded him with a poisoned arrow. Often for six months at a time, even longer, will he search and watch, and during the whole period avoid every intercourse with other Indians: forest trees and mountain hollows are his nightly camps, the fruits alone are his food. But from the time that he leaves the village he is considered as much an outlaw by the other Indians as the victim whom he pursues is to him. While the kanaima thus casts aside all the bonds that tie him to his family and tribal relatives, he becomes the bug-bear, the demon of the neighbourhood, an outcast whose life is at any moment forfeit, because from now on it is the duty of every Indian to kill him whenever met with in the forest. When following the first two methods mentioned of satisfying his revenge, no outward sign betrays his inward emotion, his criminal intent, but now this is made patent. His body is painted in a peculiar fashion and an animal's pelt is worn. If he finally meets his victim alone and deems himself the superior in physical strength, he starts the fight, wounds him with his poisoned arrow, and transfixes his tongue with the fangs of the most poisonous of snakes. The victim, with his tongue swollen to an ungainly mass, is thus entirely robbed of speech for the now measured period of his short remaining life, so that even should he succeed in reaching his village he is unable to name his murderer, for otherwise another kanaima might arise on behalf of this victim and a similar fate overtake the present one. I know from my own experience that the Indians carefully collect the fangs of the worst snakes, because during the course of our journey we could never kill any of these reptiles without their breaking them off and preserving them.

---

* The description of the symptoms is too vague to permit of accurate identification. Any high fever would cause the tantalizing thirst. It would seem probable that the description is of Malarial Fever with gastro-intestinal localization. (F.G.R.)

745. I had personal proof as to how deeply this superstition is rooted in the Macusis, even after my return to the homeland in the case of a very intellectually gifted Indian who, absolutely on his own account, had accompanied my brother to England, to learn all about the land of the Paranaghieris, and from there had come over with him to my father's home, where we brothers and sisters had foregathered once more after a long period of separation. Misseyari (= long hair) had an infinitely fond attachment for his only sister: for her he collected every bead, every bit of tinsel that he could get hold of. One day I came into his room and found him seated on the chair looking very sad and terribly upset. I asked him what was the matter and whether he was sick, but Misseyari shook his head, and after a long struggle told me that he had learnt that kanaima had come into his sister's house that very night and had killed her and all her family, and that she would never now wear the beads that he had collected for her. When I enquired further whether he had dreamed all this, he said No, and the only answer I got to all my remaining questions was, that he learnt it a few minutes ago: no one had told him, he had not dreamed it but he knew it had happened that very night, and he could not say anything further.

746. As already mentioned, kanaima was of course also at Waraputa the cause of the dropsical boy's death—but to discover now in which district the kanaima lives, the Indians practise an abominable custom which, as a witness of it, gave me an awful shudder. To the accompaniment of an awe-inspiring monotonous song, the corpse was carried to an open space where, on the people forming a circle round it, the father cut off the thumb and fingers from each hand, the large and small toes from each foot, and a piece from each heel and threw the bits into a new pot filled with water. In the meantime a fire had been lighted near the corpse and the vessel placed on it. The water commenced to boil, and according to the side over the edge of which the boiling and bubbling water first threw the mortal remnants as they started bobbing up and down indicated the direction where the kanaima was hiding. There was something gruesome, something devilish about it to see these copper-coloured individuals during the singing of the song of sorrow staring with steadfast gaze upon the prancing pieces to catch the very moment for the first one to be slithered over with the bubbles. Directly this occurrence took place, it was notified by a yell that pierced one's very marrow. One of the fingers had fallen over the brim on the western side of the pot, in the very direction whence the Indians had come. After long consultation they seemed to be of opinion that the kanaima must be living in their own village. After the boy's spinal column, feet, and arms had been broken, he was coiled up like a snake and squeezed into a

small tin box, about 2ft. long, 1½ft. broad, and 1½ft. high which they had probably bartered in Georgetown on some former occasion: after its cover had been thickly plastered with wax it was carried into the forest where they built a little benab, laid the box on a staging below, and lighted a fire beneath. In a year's time they would be returning to fetch the skeleton and bury it in their village, when they certainly must have searched in vain for the skull which my brother had previously taken away with him.

747. As we had now bartered cassava bread more than sufficient to risk any scarcity of it during the next fortnight, fresh arrangements were made for the prosecution of our journey, although we had not as yet succeeded in replacing the paddlers who had gone for the things left at Ampa, because already prior to our arrival the best of the men had left for Georgetown to serve as boathands with the military expedition. My brother was therefore forced to send several coloured men in a boat over to Smyth's settlement where they were to try and replace those who were missing, but the attempt, as might have been expected, was in vain, the chieftain strictly forbidding his dependents to accompany us. On their return they brought a huge matamata turtle (*Chelys fimbriata*) that they had caught on the bank. It was the only specimen we had seen on the Essequibo: I found it all the more plentiful on the Takutu, not only on the river itself but also in its back waters. There cannot possibly be a more hideous creature than such a turtle, its abominable appearance, already sufficiently deterrent in itself, being rendered still further repulsive on account of its horribly disgusting stench. Höllenbreughel, so wanton in his fantastic description of horrors, has never created such a monstrosity of loathsomeness as the reality presented here. The Caribs fell with real fury upon the flesh of the animal: I claimed the carapace which was unfortunately spoilt subsequently. The snout-like head and neck, with a number of hacked-out lappets, and broad feet with similar but somewhat smaller ones, both of which it is unable to withdraw under its flat carapace, aroused my deepest disgust every time I came across a specimen. The jaws are just as flabby and puffy as those of the Pipa. Amongst the birds found here the beautiful *Trogon melanurus* Gould., as well as *Bucco cinereus* Gm., and *B. tenebrosus* Gm. were particularly conspicuous. Cuia is the name given by the Indians to the Trogon.

748. On the day before leaving, the first thing we did was to haul our boats over the small Waraputa Falls, a labour that robbed us of most of the day owing to the whole of the baggage having to be unpacked, and yet these were far from being the most dangerous of the series, those of the Twasinki still being ahead.

749. In company with Sororeng, his wife, her mother, and a second Indian with his wife and family that formed the crew of the boat loaned by Mr. Youd, we once more started up the river. When on the farther side of the islands that one can overlook from Waraputa, rapid followed upon rapid so quickly that we were hardly able to breathe freely in the real sense of the term. In the course of the wearisome day two huge granite boulders on the eastern bank, of which the one had a circumference of

95 feet and the other 65 feet, especially interested us owing to a peculiar impression on the surface of their summits: they at the same time reminded me of a similar freak of Nature in the homeland. As in the wildly romantic Bode valley of the Hartz Mountains, the highest rocky top shows distinct tracks of a horse on the jump, so here on both granite boulders one is apt to be deceived by the imprint of a human foot just in such a way as if somebody had sprung from one stone to the other: the representation of the whole foot, but particularly that of the five toes is indeed remarkable. The Indians told us, with a certain amount of awe, that this was the trail left behind by the Great Spirit when he still lived amongst their forefathers and had wandered through the district. These two huge granite blocks had apparently been one boulder in previous times: as the result of natural causes this had burst and was completely split. The coloured people called them "Jump-stones."

750. The Rapids commencing above these interesting boulders continue in similar if not increased number on their farther side also, so that during the course of a whole day from sunrise to sunset it often happened that we barely covered three or four miles. The uncommon skill and facility in swimming, that I had hitherto only had opportunity of admiring in the Indian males, was displayed by their women to an equal degree, for Sororeng's wife and mother-in-law braved the whirlpool when hauling their boat just as well as the men, and swam rope in hand through the blustering eddy from crag to crag with the same ease as they did.

751. On the 18th January we at last reached the Twasinki Range rising 1,100 feet above river-level on the western bank, while some miles farther in the background the Akaiwanna Range, some 1,000 feet in height, rose on the eastern shore. Both these ranges impinge upon the river in such a way as to force it into a regular S, a double bend, the total course of which amounts to about 6 miles. Innumerable rapids and eyots with intricate channels, the waters of which often seem to be changed into masses of foam, render this stretch almost unnavigable. Of the three most considerable waterfalls which are found within this reach, that of Yucuribi* in 4° 59′ lat. N. is the most dangerous. A huge rocky dam, formed of granite and gneiss boulders piled up on top of one another in layers, that cuts the river from north to south, is responsible for the really grandiose scenery here: the mountain ranges simultaneously recede somewhat from either side of the river and by that means form the most magnificent mountain amphitheatre that the imagination can shape, an amphitheatre in the arena of which the wildly raging foaming and thundering waves of the river, already cribbed and cramped by the preceding rapids, rush against one another in the most awful strife. The waterfall must have been visited several times already by enterprising colonists, because several names and initial letters were seen to have been cut on the trees standing near.

---

* Great Yucuribi Fall is over diabase (E.E W).

752. The Taquiari, a spur of the Twasinki Range, even at a distance occupied our whole attention. Two mighty granite boulders that towered far above the dense masses of foliage surrounding them and from far off looked exactly like the large watch-towers of an old castle-ruin, lent the mountain quite a peculiarly romantic charm, and reminded me of the happy hours spent on my trip down the Rhine. And yet what a huge difference there is after all between these two streams. Over there every inch of land called to the wanderer "I am subordinate, subject to human intelligence." Out here, however, Nature was loudly proclaiming in her unrestrained liberty, "I still rule with my original strength unimpaired." Over there, break of day awakens the life that has hardly fallen asleep, and what with boat pressing after boat, the splashing of the busy oars that beat time to the joyous matutinal greeting of the lark, and the half-hidden hamlets peeping pleasantly from out of the dark green of the vine-clad heights—there is but very little of Nature remaining to be seen anywhere. Over there, large two-masted ships push off from their anchorage and follow the old highway while the herdsmen drive their cattle, with the cheerily tinkling bells to the water, and the ruins of the Past either look down in sombre gloom from the mountain tops or else are reflected in the ever-youthful never-aging current: in short, civilisation yonder has spun a multiplicity of interests around human life and is prepared to lay Nature waste over a still wider area. But here? Everything the reverse. The eye searches in vain for testimony of creative human intelligence, of the transforming powers of man, but only recognises the works of Nature labouring with inconceivable prolixity; for here, even Man himself who is still the true image of her handiwork has not yet freed himself from her bonds, nor yet risen superior to her sway.

753. The Taquiari or Comuti range receives its name from two remarkable columns formed of several granite boulders heaped on top of one another, and the one of which when quite close resembles an Indian water-jug, called Comuti by the Arawaks and Taquiari by the Caribs. Both columns commence about 150 feet below the highest pinnacle of the range which is somewhere about 800 feet high: the height of the Comuti rock* is 160 feet. On one of the columns are to be seen several Indian sculptures which in regularity and symmetry surpass those of Waraputa. The Indians who came over here with us for the first time were seized with fear and trembling, because they recognised in these stony giants the haunts of an evil spirit, the demon who delights in other people's misfortunes, who would be vexed if they snatched a look at his "Belle Vue": their deaths in the next rapids for being so inquisitive would be due to his revenge. Nevertheless man's curiosity often braves certain death as soon as it is made possible for him to yield to its seductive temptations. Accordingly, directly we got near the mischief-making rocks a quantity of tobacco was sprinkled into the eyes of those who were visiting them for the first time. Naturally the

---

* Comuti Mountain is composed of diabase. (E.E.W).

intense pain produced by this burning lye prevented them opening their eyes, now bathed in tears, and gazing upon the dreaded watch-towers. It was impossible to refrain from laughing on noting the earnestness with which the older ones rubbed this juice into the novices still subject to the spirits' powers, and the grimaces and contortions caused by it. The sufferers were allowed to wash them out only after the fateful spot was passed. The Indian regards every out-of-the-way-shaped stony mass likewise as the residence of an evil spirit and it is only with the greatest anxiety that such situations are traversed. As we never adopted these precautionary measures but continued to direct our vision on these wonders of Nature, they naturally expected nothing else than our immediate annihilation. Even in the far distance we saw both giants rising above the densely matted tops of the trees.

754. We passed the mouth of the little stream Akaiwanna whence a well trodden path leads to the Demerara, which is said to be reached in six hours from here. Beyond the Comuti range the base of which on its southern slope is watered by the Murawa that falls into the Essequibo opposite the Curibiru Falls, the hitherto compressed river bed gradually widens until at the 100-yard wide mouth of the Siparuni or Red river, which empties into the main stream from the south west, it almost resembles a lake encircled with thick forests, an illusion that is still more promoted by the almost unnoticeable current. Having searched in vain around the Essequibo bank for a suitable spot to rest at, we journeyed some way up into the bed of the Siparuni, a river that has received its name from the brownish-red colour of its water: its banks were thickly covered with the most beautiful timber. The Burro-burro joins it some 6 miles above its junction with the Essequibo, situate 4° 47′ lat. N. From here the Brazilians claim as Imperial territory the whole of the western bank of the Essequibo as well as the southern bank of the Siparuni. It did not take us long to find a convenient camp, and as the continuous filliping and splashing of the water promised a fairly rich supper, the fishing-lines were immediatetly got ready and thrown out, but still quicker hauled in, because almost at the very same moment these touched the water, the fish took the bait. Naturally the catch consisted for the most part only of several species of voracious Pirai (*Pygocentrus niger, piraya* and *Pygopristis fumarius* Müll and Trosch.) and the *Serrasalmo aureus* Spix. They are the greediest predatory fish to be found in sweet water, and could therefore rightfully be called its hyenas: for the rest, they are found in almost all the waters of Guiana. Alexander von Humboldt has already reported how dangerous these fish are to bathers for which reason the Indians always have a very good look at the water beforehand to see whether it is harbouring any. The *Pygocentrus niger* are about the size of a carp and armed with a real rake of the sharpest teeth: they are accustomed to collect in large swarms at certain spots, and then imperil everything that comes within reach, even fish that are ten times larger than themselves. If they attack a larger fish they first of all bite off the tail-fin and thereby rob it of its chief organ of locomotion, while the remainder fall upon it like harpies, pull off the flesh and

tear it to pieces until the head only is left. No mammal that swims the stream escapes their exorbitant greed: indeed, even the limbs of the water fowl and turtle, and the toes of the alligators are not safe. If the kaiman is attacked by them it usually rolls itself on its back and stretches its belly on the surface. The surest sign of their voracity is most conspicuous, however, in this that they do not spare their own wounded mates, as I have myself noticed. While busy fishing one evening I hauled quite a fair-sized pirai on land, and after thinking I had killed it by striking it smartly on the head, placed it beside me on the rock. Nevertheless it all of a sudden made a jump or two and before it could be prevented, got into the water where, although half-stunned, it swam about on the surface. In a twinkling, 16 to 20 of its mates were gathered round, and within a few minutes nothing but the head was left. Like some of the species of *Silurus* it also grunts when drawn out of the water. The flesh is really not without taste but extremely bony, for which reason we only bothered about it when we could not catch any other.

755. Four miles farther to the southward we reached the northern point of Tambicabo, a long island that stretches 8 miles down the Essequibo and divides it into two channels which branch off at so considerable an angle that they have been often mistaken for two different rivers. In a deep and picturesque bight of the western arm there formerly stood Arinda, a Dutch station. On the farther side of Tambicabo the river surface was again intercepted with numerous islands, and our turtle-egg harvest commenced afresh. Whenever passing a sandbank uncovered by water, or a small island, we always had to make a stop so as to fill all the boats with the countless eggs, for it was only now that the actual laying season seemed to have commenced. Whole baskets of eggs were collected by the Indians in a very short time, Mr. Fryer having in the meantime discovered that the yolks formed an excellent substitute for the milk wanting in our coffee. During the day we saw whole crowds of turtle near the sandbanks stretching their little heads out of the water as if perhaps wishing to view the spot where they proposed ridding themselves of their burden at night. The slightest noise frightened them away and our coloured crew maintained that those thus scared off always searched for another island or sandbank. At nightfall they betake themselves to the land, scrape out with their hind feet the holes in the sand already mentioned, place themselves vertically in them, lay their eggs, cover the cavities over again and make their way to the water. Our Indians often surprised them about midnight at this manoeuvre, when they just turned those which they caught on to their backs so as to lose no unnecessary time in carrying them off and letting the other scared ones escape. The flesh however was at this period unusually tough and coarse. Just like the coloured folk of the lower river areas, the Indians of the upper reaches arrange big expeditions here about this time, in order to collect and smoke the innumerable eggs, a condition in which they not only keep a fair time, but also taste quite good. The white of the egg disappears in the process, only the yolk getting hard. By the presence or absence of a pair of little black dots the coloured man and the Indian can recognise at once whether the development of the

young turtle is already advanced or if the egg is still fresh. But man is not the only one to search for these delicacies: members of the cat tribe are just as keen on hunting after the eggs as are kaimans and certain birds. It was a highly amusing sight watching the Indians, coloured people, and those Germans of ours chasing about with the greatest diligence on such islands where the last mentioned, of course, always collected the least share of the booty and generally only got leavings when a jaguar or kaiman had visited the nests before-hand. While, therefore, the former often brought home their thousands, the latter and especially poor Stöckle, amidst the laughter of the more fortunate ones, returned with hardly a dozen in his basket, and yet he could never pick one big enough when he started out. In the evening one of our captains who was just then engaged splitting some wood was stung by a scorpion on the ball of the hand: he had trampled on the creature after being injured and hence the species could not be determined. The swelling was only slight, but the wound seemed the more inflamed, and the poor devil whined and complained, all night through, of a stinging pain in the breast and shoulders. We got him to rub the wound frequently with laudanum: by morning the pain was relieved and by the day after he could use his hand again.

756. Among other interesting plants on Tambicabo Island I found *Artanthe apiculata* and *corylifolia* Klotzsch., *Mikania racemulosa* Benth., *M. denticulata* DeC. and the celebrated *Guaco* Humb. Bonp. The natives call the latter Errawarang: the coloured people use the decoction of it as an effective remedy against syphilitic diseases: nothing was known here about its being an antidote against snake-bite.

757. In the course of the next 24 hours we got near the Ouropocari Fall, but to negotiate this mighty obstacle to the further progress of our journey that very same day was an impossibility, and so we postponed the strenuous task for the next. Upon the western bank at the foot we not only found a suitable camping ground but also believed we had struck a spot in the falls where we could hope to haul up the corials. A huge basalt boulder attracted our attention at the very start: its perpendicular sides were fluted channel-like in so remarkable a manner, and the excavations ran so regularly and symmetrically as to give the whole quite the appearance of a richly decorated Gothic tower.

758. Although we had hitherto fought all the dangers that threatened without any loss of importance, our fears were nevertheless a good deal more intensified here than at any of the previous falls, and we accordingly had even the most trifling articles taken out of the boats. After finishing this tiresome business and doing justice to the rare dishes on our richly supplied princely table where the tasty pacu, tiger-fish (*Platystoma tigrinum* Val.) turtle and turtle-eggs again paraded, we lay down in our hammocks amidst the raging uproar of the waters and awaited the following morning for fresh troubles and renewed work. On the eastern side of the fall is a small island upon which there is said to have been a fair-sized coffee plantation during the Dutch occupation, and that berries had been gathered there even up to a few years ago: probably it had been established at the same time that the Dutch extended their

stations as far as Arinda. My brother had visited the island on his previous journey and had still found undoubted traces of a pond as well as several fruit trees and non-indigenous ornamental plants run wild. On the eastern bank were several mountains with a name received from a little stream which the Indians, in connection with its dark brown waters, called Siroppa,* because it seemed to bear resemblance to the syrup probably seen by them in Georgetown. Upon the tongue of land which we had chosen for our night's camp there also bloomed the dainty *Tabernaemontana alba* Mill., the *Deguelia scandens* Aubl., *Eugenia Salzmanni, vismiaefolia* Benth., *Elisabetha coccinea* Schomb., *Inga floribunda* Benth., *Spennera disophylla* Benth., and *Andira laurifolia* Benth. And now, there were we in the midst of this lovely floral finery puffing and sweating under the exertions of bringing the empty boats out of reach of destruction, a labour that we only managed to complete by afternoon: we had had to do without the powerful services of a Waika and a Warrau who since last night had been attacked with violent dysentery.

759. Behind the Siroppa and Omughou mountain-system on the eastern bank certain picturesque heights, the Maccari Mountains, soon towered up in the S.E. and we were able to get an extensive view of the beautiful landscape: the river, still 1,400 yards wide here, once more presented an unbroken surface having its banks fringed with innumerable groups of palms, amongst which *Bactris pectinata* and *tomentosa* Mart., as well as *Astrocaryum gynacanthum* and *vulgare* Mart., were particularly noticeable. We likewise came across a number of *Rhynchops, Plotus, Carbo, Ardea* and *Alcedo,* especially *A. torquata,* which often caught fish much larger than it could swallow, and after strangling and struggling would then perch upon the boughs of a tree close to the water-side. The mammals were represented here by large packs of pretty sackawinkis (*Callithrix sciurea*) which swung themselves with inconceivable agility from branch to branch, and from tree to tree, searching every leaf, every spider's web for caterpillars, beetles and spiders. On drawing near one of these merry companies we every time heard a grunting note with which probably the sentinels made the careless ones cognisant of the danger threatening, for all at once a deep sudden silence would set in: this was only now and again broken by the springing from tree to tree, as well as by the squeaking of a weaker animal when in its flight it happened to get in the way of a stronger one which had bitten it. I was also witness here of the sacrificing love of these creatures for one another. Having crawled unnoticed on to one of these parties we managed to shoot several, amongst which was one, however, that was only badly wounded. It made several attempts at escape and when all failed raised a lamentable cry whereupon two others returned from the fairly distant pack, probably with a view to its assistance which, however, proved to be useless: without my having noticed it, one of the Indians out of the boats had pointed his flint-lock at them, and the

---

* The Macusi Indians call it Ouropocari or Kurupukari Creek after the Falls: they do not know it under the other name. (Ed.)

shot brought all three down at our feet. In the evening the Indians ate the five monkeys that had been killed, as great dainties. With these monkeys also, the youngster clambers upon the back or under the body of its mother: she never leaves its side even when it is already playing round about on the branches, so that, on the slightest danger she may be able to shoulder her fond burden, hurry off, and away with it.

760. For some time past we had been frightened particularly at night by an awful uproar that completely resembled a distant cannonade. For a long time I did not know how to explain the terrible noise until our Indians taught me that it was caused by the accidental uprooting of the forest giants. To-night we were to be witnesses of such a scene of destruction in the immediate neighbourhood of our camp. Hardly had I lain down than I was awakened first of all by an uncanny rustling, which was immediately followed by a frightful rattling like that from innumerable rifles, and after a time by the most mighty thuds. A small distance away from us the bank had been undermined by the current and the whole of the huge growth covering it followed the collapse of the soil. It was indeed a gruesome scene. A huge mass of foliage was heaved into motion, and with the awful and really deafening crashes of splitting and breaking timbers the falling giants dragged down into dire destruction everything in the neighbourhood that was connected up with them by bush-rope. In the morning there lay a large stretch of forest bank upside down in horrible confusion and the waves of the Essequibo foamed wildly through the immense branches that only yesterday were still softly swaying in the evening breeze. I often subsequently bore witness to such scenes of devastation: indeed, I myself was the cause of them, on a small scale, whenever I with my Indians felled a tree covered with flowers which on account of its height could not be climbed, when it usually entangled from six to ten of its neighbours in its fall. On several occasions I thus came into possession of flowers which, on account of their small size I had not at all noticed on other trees, and then found myself doubly rewarded for the long labour, often half a day occupied in cutting the giant down.

761. Hardly had we struck camp than a new Rapid, that of Orotoko already lay before us, and once more gave us plenty of hard work to do before we could resume progress in still water. A number of large white cranes were strutting around on the exposed ridge of the stone dam. Deceived by the distance and morning haze, under the veil of which all objects become enlarged, we were first of all of the opinion that it was a party of Indians who happened to be on a turtle-egg expedition until we at last realised our mistake and at the same time noticed several *Carbo* in their place. Morning on the river had quite a peculiar charm. The sunbeams of the early dawn again mirrored themselves in thousands upon thousands of dewdrops on the tree tops and hardly had the glowing orb put in an appearance over the eastern bank than the huge rocky boulders like mighty craters started rolling their steam-clouds over the surface of the water and so made every object at least in the distance seem half a dozen times as big.

762. After getting over the Orotoko the isolated and many clefted Maccari Mountains once more came into view some two miles distant from the bank in the S.E. So far as I could make out in the distance their abrupt slopes which in some places rise perpendicularly are everywhere covered with whitish masses of rock: trees and bushes were only to be noted here and there. Their western peak is exactly like a giant gable. They lie in 4° 32′ lat. N. Four miles farther south the rapids began afresh and extended between a real labyrinth of islands for a distance of 8 miles: there being a real superabundance of *Lacis fluviatilis* growing upon the crags, the *Myletes Pacu* had again collected in immense shoals.

763. Having had whole series of mighty rocky battlements to contend with for some days past, we halted to-day after all our troubles and hardships at the foot of the Achra-mucra Falls with their really sublime and imposing parapets and whirlpools, their eddying and blustering waterfalls. These huge granite and gneiss walls opposed the course of the stream for several miles: they were 10ft. in diameter and generally rose to a height of from 40 to 50 feet above the water level and amongst them were many that shone like black polished marble, and towards their summits were split into innumerable peaks. While in some places these boulders emerge from the violently disturbed waters like a petrified giant forest without any branches, in others again they are heaped up on top of one another in chaotic confusion and bedecked with *Orchideae, Tillandsiae, Cactus, Clusiae,* low bushes and stunted trees. I was especially struck with the beautiful *Cyrtopodium Andersonii* R. Brown, that I met here for the first time: its sedge-like leaves exactly resemble those of the young sugar-cane, and the often foot-long yellow shiny flower-stalks made themselves already noticeable at a tolerable distance. Associated with it on some of the heaps of rock were also the really enchanting blossoms of *Cattleya superba* Schomb., the orchid of orchids, the flower-stalks of which often showed seven to eight opened flowers of a dazzling dark-violet hue, as well as the equally interesing *Huntleya violacea* Lindl., and scarlet-red *Epidendrum Schomburgkii* Lindl. that garlanded the aged stones and stood out in startling contrast with their sombre massif. Achra-mucra is without doubt one of the most interesting spots of the whole Essequibo. The rocky barrier extends inland on both sides from East North East to West South West. The drier we found the Essequibo below the Achra-mucra and later on above it, the more surprised were we at the depth of some of the channels between the immense clefts: this usually amounted to from 12 to 15 fathoms. The stream welters between the mighty parapets and giant rubble-heaps in a way enough to make one shudder, and it would be venture in vain to cross the falls were there not among the innumerable channels one that is quite free from hidden rock. While the corials were being hauled up it, I clambered over the crags that could be scaled and collected a number of interesting plants among which need only be mentioned *Vitex capitata* Vahl., *V. umbrosa* Sw., *Petrocarya campestris* Willd., *P. coriacea* Benth., *Leptolobium nitens* Vogel, and *Spigelia Schomburgkiana* Benth.

764. Our two invalids getting weaker and weaker soon became walking skeletons and although at yesterday's camp one of the Warraus, whom I had long suspected to be a Piai from his not eating salted fish or salted meat, had practised his supernatural powers on his fellow tribesman, by blowing whole clouds of tobacco in his face, and murmuring some incantations, the treatment had so far not proved effective at all. This evening a Waika took pity on the sick Waika for dense smoke-clouds were wafted over to us from out of the brushwood where both medicine-men had removed their patients. I was only surprised that the poor fellows did not die.

765. For a long while past, whenever the coloured people heard us admiring any beautiful landscape, they started talking about some illuminations that would surpass everything that we had hitherto seen, but however inquisitive the intimation had made us there was always unfortunately wanting the very article necessary for its display, namely, a *Mora* at least partly hollow, a timber that is considerably more resinous (*fetter*) than our fir-trees. We had pitched camp to-day above the Achra-mucra on the western bank below the protecting shelter of giant Mora trees when one of the men came gaily tripping over to us to say that the exhibition could now be installed, for he had just found an excellent fire-torch, a tree at least 130 feet high and ten feet in diameter. Hardly had the sun dipped behind the western edge of the forest than the preparations were set afoot, and a small fire lighted in the opening at the root-neck (*Wurzelhals*) in the inner core of the hollow tree. It was again one of those infinitely beautiful fairy-like tropical nights: the heavens, without a cloud, dotted all over with myriads of sparkling and glittering stars, not a breath of air to sway the dense foliage of the dark forest: the surface of the proud stream, beyond the reach of its rage-restrained wrath, resembling a mirror that reflected every object: all was at peace and rest, and only towards the north did the waters wage a fruitless and furious fight against the stone parapets calmly gazing on them. The lighted fire might have been burning half an hour when the inner walls of the cavity right up to the summit seemed to have caught fire. We stood upon one of the highest crags spellbound for the moment at the outburst of blazing flame: in front, the foaming water and dark rocks, at our side, the dark mass of forest, and behind, the glassy smooth surface of the becalmed and languid current. There now forced itself from out of several openings evidently situate where the branches were given off, a thick oily black smoke which made its way over the stream in long and curly streaks: these were lighted up of a sudden by some sparks that rushed through the black columns like forked lightning. The flashes of light were repeated more and more frequently until they also at last changed just as abruptly into a huge column of fire that drove ahead of it a regular cloud of flaming sparks in the midst of a dense black whirl of smoke and then, like a sky-rocket, blazed up into the skies. This moment was as surprising as it was sublime, and all of us gave expression to our admiration and astonishment. The effects of the bright and dazzling illumination upon the surrounding wildly romantic rocks and

upon the madly roaring eddy, associated with the heavy fuming and foaming of the unbridled waves: then again, the glaring streaks of light upon the dark-leaved giant trees of the immediate neighbourhood, as well as the tremor of their foliage which, started by the heat, seemed to presage the early death of the fairy-like brightly coloured blossoms of the innumerable Orchids and *Tillandsiae* covering their aged branches: together with the peaceful picture of the vegetation reflected in the still water on the distant eastern river-side:—in short, all and everything combined to stage an evening's entertainment that I am unable to delineate at all, and which even a deeply poetical soul could only describe approximately. After the main gulf had for a long time blazed up its mighty column of fire in solitary loneliness, larger or smaller smoke-clouds gradually commenced to rise as before, from all the bigger branches that likewise must have been hollow: these clouds soon changed into equally plentiful lesser columns of fire, so that the illumination ever became more enchanting, and fairly-like. Really, here was a Christmas Tree such as no Croesus in the world possessed. At last one huge bough after another broke away from the immense trunk with a frightful crash, until this alone was left standing like a giant chimney out of which the flame continued shooting high up to heaven, and scattering a real rain of fire in all directions. We had to thank our informants in some fashion or other for this lovely spectacle—and how could we express our gratitude in any better way than by an extra ration of rum?

766. Fortunately getting over the Achra-mucra Falls next morning by way of the channel already mentioned, we fixed up a comfortable place in Mr. Youd's corial for our two patients who were unable to sit up straight: we had given up all hope that the Waika would live the evening. After making our way for about another 12 miles up stream towards South East, we reached the Rappu Falls and the mouth of the Rappu River streaming into them from the West: this has received its name from the quantity of bambu, *Guadua latifolia* Kth. growing here which is called Rappu by the Indians. A rocky barrier of coarse-grained gneiss with red felspar crosses the river from East to West. Strange to say we searched in vain for the slag-like glassy coating of the rocks which had been met so generally in all previous falls. On the farther side of Rappu Falls the mighty bend of the Essequibo which we had followed since Potaro mouth for a stretch of 90 miles towards the S.E. came to an end and the surface of the stream now again lay for 13 miles straight south ahead. A long island, about 2 miles above the falls, divides the river into two channels of which the eastern is called Wenkobat. The big bight (Kirahagh of the Indians) Aruan or Tokutu encroaches deeply on the western bank. With the Rappu Falls the last rocky dam, the last of the rapids, was passed, and continuously smooth water would carry us now all the way to Pirara. What wonder then that, overjoyed with the luck that had hitherto favoured us, we stopped in still water at the last crag and handed our crews and captains an extra draught, we ourselves opening a bottle of champagne to celebrate the successful passage of the dreaded cataracts. This being done, a

50ft. long bambu was fetched and the empty champagne bottle tied to it: we had previously enclosed in it a sheet of paper conveying greetings to the officers of the military expedition with the wish that fortune might prove just as kind to them in crossing the falls as she had been to us.

767. In the most cheerful humour we jumped off the crag into the boat: I never dreamed at the time that my joy would be changed so soon into sorrow:—

"O'er treacherous paths the Fates still trip:
There's many a slip 'twixt the cup and the lip."†

All flags and streamers were run up, the four remaining boats floated merrily along on the tranquil surface, and the Union Jack seemed as if beckoning to the Prussian colours fluttering far behind to hurry up and join it. Just as my captain was about to take up their challenge and was turning round the rock—a powerful smash, and everything that the corial contained was in the water: he had not noticed a hidden crag and the current had upset the boat. The accident happened so quickly and unexpectedly that I only recovered my senses when, standing up to my neck in water, I saw gliding past me all the articles capable of floating and the whole of the Indians busily engaged in swimming after them. The general cry of anxiety had recalled the boats hastening ahead, and everybody tried their best to save the sinking and floating baggage: they were fortunately able to save everything except several packages with about 100 plant-specimens and a large number of fish-skeletons, which the breaking eddy had already engulfed. Naturally, the water, the greatest enemy of all, had made its way into almost all the cases, but as the cloudless sky with the scorching sunshine promised an early *restituo in integrum,* we quickly unpacked everything and exposed the saturated collections to its full effects. Articles of trade for the Indians, plants, bird-skins, and mammal-pelts, everything was spread out in a motley crowd upon the rock, and four hours later I could again follow the remaining boats which proposed waiting for us at the camp. Had the accident happened but ten feet farther out in the stream, everything would have gone to the bottom or would have come to light again in the whirlpool on the farther side of the rapids, smashed to pieces, a fate that Stöckle and I would have probably shared, because neither of us could swim well enough to withstand so strong a current.

768. On the farther side of the island encircled with the slender bambu (Sect. 766) the stream, more than 500 yards wide, seemed completely free of obstacles. Its western bank, consisting of a white clay, gradually rose more and more until it at last formed a 15-foot high white wall. A fairly sharp bend of the river bed had hitherto hidden every distant prospect from me, but hardly had we rounded it than the Makarapan Range towered up ahead in the S.W. and formed a lovely background to a most charming landscape. A number of giant *Bombax*

---

† "Tückisch sind des Schicksals Mächte,
Voreilig Jauchzen greift in ihre Rechte,"

globosum strove to make themselves as tall as the *Mora,* their trunks shooting up above an impenetrable thicket, at least 30-foot high, of *Cucurbitaceae* which had crept up to them and crowded out every other genus of plant. The eastern bank was low and showed only *Psidium* and *Cecropia peltata.*†

769. An innumerable swarm of pigeons (*Columba rufina* Tem.) enlivened the mighty trumpet-trees with which the island was invested, and the coo-ing of the males sounding in the distance indicated the pairing season. Not daring to let slip this excellent chance for a tasty supper, the hard and rough language of our guns broke discordant in between the soft and flattering notes of love. A curling smoke through the thick foliage ahead shewed that we were not only getting near camp, but that we should find boiling water ready for our spoil.

770. With the shout "A water dog! a water dog!" the coloured crew drew my attention to an animal that indeed did look a good deal like a dog swimming. The Warraus called it Etopu. While directing my attention to it I suddenly kept on seeing more and more heads emerging from the water until at last seven, in which I soon recognised otters, had collected round our corial. With a peculiar barking and snorting they came close to the boat, now raised themselves to more than half their length above the surface, then disappeared just as quickly, and bobbed up again at a distance farther off. The Indians now gave a most striking imitation of their peculiar rattling note during the execution of which they at the same time kept continually tapping their throats with the hard flats of their hands. At once the otters were all attention and ranged themselves in a row: enticed by, and inquisitive at, the sounds they then came swimming over to us where they kept on repeating their husky bark as well as their previous manoeuvres of bobbing up and down, and exposing their frightful sets of teeth. Of course we all had our guns ready but as we were about to raise them every head disappeared below, only to come into view again at spots quite other than where we expected them. The sport proved too slow for one of the Indians: he suddenly fired his weapon, the animals escaped, and only emerged again in the far distance. They were the first otters that I had come across. According to what the coloured people told me, two species are found in the Essequibo, and equal difficulties encountered in hunting them. Whenever it receives a wound not immediately fatal, the animal dives at once and does not appear again: I was able to convince myself of this many times subsequently by repeated experience. I was unfortunately not certain whether the two species that were very frequently seen in the

---

† Amongst the many ferns that I collected on the banks of the Essequibo are to be found several new species which Dr. Klotzsch has already described in v. Schlectendal's Linnaea. Vol XVIII, Part V. under "Beiträgen zu einer Flora der Aequinoctialgegenden der neuen Welt." The genus *Lindsaua* especially supplied me with a quantity of new species, as: *Schomburgkii, crenata, divaricata, Moritziana, pendula, gracilis, Raddiana,* Klotzsch. Besides these I found *Lindsaua reniformis* Dryander, *L. trapeziformis* Salisb., *L. dubia* Spreng. *L stricta* Dryand, as well as *Alsophila ferox* Presl., *Lygodium volubile* Swartz, *Neurophyllum pinnatum* Presl., *Mertensia pectinata* Willd., *Schizaea trilateralis* Schkuhr, *S. elegans* Swartz. *S. flabellum* Mart, *Trichomanes heterophyllum* Willd., *T. pellucens* Kunze, *T. plumula* Presl., *Hymenophyllum polyanthos* Swartz, and *Cyathea aspera* Swartz.

course of my journey are what Ray has described as *Lutra brasiliensis* and Cuvier as *Lutra enudris*: it also remains just as doubtful whether the one described by Azara is identical with the *L. brasiliensis*.

771. We met everybody in camp as busy as could be, for they had again found an innumerable quantity of turtle eggs and hooked a large number of tasty *Phractocephalus bicolor* Agass. to which we now added our rich supply of pigeons. One finds the *Phractocephalus* in almost all the Guiana rivers where it takes the hook baited with meat as greedily as the pirai; it also gives the same grunt when pulled out of the water. The Indians called it Pacarnima. To our great joy the condition of the patients was unexpectedly very much improved during the course of the day.

772. After close upon a four weeks' fight against the river and its rapids, we reached next morning, in 3° 59′ 45″ lat. N., the mouth of the Rupununi, one of the main tributaries of the Essequibo into which it streams from the S.W. The distance from the mouth of the main river up to that of its tributary, including bends, amounts to about 240 geographical miles; the latter lies about 320 feet higher. As the Essequibo water has here a blackish but the Rupununi a dirty yellowish colour, one could follow the latter stream far into the Essequibo before both rivers, intimately merged into each other, rolled as one into the ocean. As in their waters so do both streams also differ in their banks and waterside vegetation. The banks of the Rupununi, on which the varying water level is to be seen clearly defined in the horizontal streaks of mud, consisted here of a yellowish clay mixed with sand; they rose at the mouth to a height of about 16 feet and were occupied only by the water guava (*Psidium aquaticum* Benth. and *P. aromaticum* Aubl.), associated with dense groups of the Sawari palm (*Astrocaryum Jauari* Mart.) at the back, which unmistakably betrayed the poverty of the soil. Although the mouth possessed a width of 200 yards, the bed nevertheless in certain spots had barely a depth of 3 feet, a ratio that remained peculiar also farther up the river. It was curious that the temperature of the blackish waters of the Essequibo registered two degrees higher than that of the yellow Rupununi.

773. Several corials that we found tied on the southern bank gave us the sure sign of the existence of an Indian settlement in the neighbourhood. We landed as quietly as possible and were really not noticed by the residents until we actually stood before them. The village consisted of four large houses built upon a spot cleared of all weeds and shaded by some calabash trees (*Crescentia Cujute* Linn.) covered with many parasites and small ferns, as well as by some large plantain trees between which grew here and there several cotton shrubs and bushes of Capsicum with red and yellow berries. The open houses, in which we saw various light frames which seemed to have been erected to protect their possessions from the damp, indicated at the same time that this must be a Carib settlement, which the first living person whom we saw confirmed. In one of the houses, the floor of which, made of split *Euterpe* trunks, was four feet above the ground, so that one had to climb up to it on a small ladder, there sat a big stout Carib painted red and white

engaged in plaiting. Now although our party numbered more than forty persons, representing a real colour chart from white to black, and filled the whole of the vacant space in front of the building, its owner did not vouchsafe us the slightest attention, but continued calmly working away as if he were the only person in the whole place. Zeno himself could not have been more indifferent to the outside world than this Carib was. When our Negroes burst out laughing at anything which they particularly did, on finding in the background a whole troupe of women, with many a very pretty face amongst them, staring up at us full of surprise, each one cast a contemptuous look upon the laughers and the next moment turned their eyes back upon their work.

774. Irritated by his neglect we might have been standing close to the gentleman for about a quarter of an hour without his putting aside his assumed indifference when I at last remembered that irresistible magic key, which had previously rendered such signal service in the Carib settlement Kai-tan on the Cuyuni. This was produced, and as happened there, it opened all the locks and bars that had hitherto closed his speechless lips. The surly fellow suddenly got up, became talkative, called us his "mattis," dropped his work, ordered his wives to bring plantains, bananas and yams, to catch the fowls that were running about in plenty—in fact, proved himself as obliging as we could possibly wish. Whilst making a mental note of the altered behaviour of this son of nature, which was solely due to his learning that strong liquor was present, there fell upon my ear from out of the near forest some wondrous note such as I had never before heard. It was as if someone were striking several harmonically tuned glass bells. I now heard them again, and after a minute's pause, once more and yet again; there was then a longer interval of from six to eight minutes, when the clear full harmonic notes rang out afresh. I stood a long while spell-bound in the hope of hearing the fairy-like cling-clang sound just once more—silence alone followed, and I anxiously turned to my brother from whom I now learnt that it was the voice of the *Chasmarhynchos carunculatus* or Bell-bird as the coloured people call it. It took me but a minute to get my gun out of the boat and ask Sororeng to accompany me, because his sharp eyes would certainly discover the bird amidst the green foliage more easily than mine: the latter, however, smilingly intimated that I might just as well remain quiet where I was because all attempts to kill the lovely songster would be fruitless, owing to its perching only upon the extreme tree tops, where it was well out of range. My attempt even to find it was in vain, for the limbs of the trees were so interlaced with one another that my view was already blocked by the first branches. No song, no note of any one of the feathered residents of the Guiana forests, not even the goat-sucker's voice, so distinctly articulate, had set me in such astonishment as the tintinnabulary peal of the bell-bird. I had already learnt when first stepping upon this remarkable portion of the globe that the birds of Guiana possessed the gift of speech, but a voice such as this had hitherto remained absolutely unknown to me. My attention was now wholly and solely directed upon this marvellous songster; it could not be withdrawn from it by anything

else, not even by the beautiful drums painted with hieroglyphics that Mr. Goodall had found in one of the houses. When the magic song was heard anew my eye rambled around into the thickly-leaved tree from which it appeared to come, but in vain. I heard the lovely song, yet never saw the singer.

775. I have already mentioned the really repulsive, depraved taste with which the Carib women bind the legs of their little girls while yet in their earliest infancy, both above and below the calves, so as to make these swell up to a size which makes them more than human. As the female sex here was already unusually big and corpulent, the calves naturally shared in the peculiarity of the body, without even requiring any artificial assistance, and the uncommonly abrupt diminution of size in these monstrous developments along the situations where the bands were tied accordingly appeared all the more repellent. It reminded me of the unnatural lacing of many a beautiful European woman who often by this means, and in accordance with the fashion, changes the natural human waist into that of a wasp. The covering, something like bathing-hose, for the hips, I also found generally in use among the women here.

776. After our chieftain, now become so obliging, had brought out everything that he could spare, and we had taken everything that we required, and given him in exchange what he wanted, we continued on our journey up the Rupununi. The evenly high banks at the mouth already differed essentially here from one another, since at every bend along which the current, hastened by the curvature, flowed past, it retained its previous height, while the opposite lying stretch of bank seemed fairly flat. Just as remarkable a difference was also displayed in connection with the vegetation. If the river for instance took a turn to the S.W. after having previously formed one to the N.E. the *Psidium* and *Sawari*-palms were always scarcer there and immediately made room in the bend for large foliage-trees, while these latter again disappeared in inverse ratio on the north-easterly bank and in the receding bend had completely given way to the *Sawari*-palms, so that both banks resembled two alternate curved lines, the rises of which consisted of foliage trees and the depressions of *Sawari*-palms and *Psidium*.

777. An innumerable number of beautiful Hia-hia parrots (*Psittacus accipitrinus* Linn.) and an equally large number of macaws enlivened the *Sawari*-palms around which they circled screeching enough to split one's ears, whilst upon the outermost branches were perched whole families of indolent and sullen carrion-crows (*Cathartes aura* Ill.) with heads drawn in, wings idle, and not worrying themselves in any way over our approach. Our enjoyment of this varying and animated scene, which, even in the never-ceasing hustle of the feathered residents every moment presented fresh changes, was certainly sadly embittered by another likewise winged occupant of the riverside. Since the commencement of the first rapids all the mosquitoes had disappeared as if by a stroke of magic, while the raging and roaring torrents seemed to have driven off the remaining winged tormentors, for we had been able to look forward peacefully to the night and calmly to the morning. With the entrance into the Rupununi,

however, our troubles began anew, because regular clouds of small *Simulia* (*Griebeln*) which the Indians called Mapire moved here and there over the water, and like harpies fell upon us and stung our hands and faces in the most wretched fashion. Every single bite is usually visible for from ten to twelve days and forms a small blood-spot the size of a pin's head. As their proboscis is extremely short, even the thinnest clothing frustrates their criminal intentions, on which account it was only necessary to protect our face and hands. The Indians, however, what with their trouserless costumes, were all the more to be pitied, for it was upon them that these insects everywhere found space to still their greed for blood unhindered, and it was not two days that we had been ploughing the waters of the Rupununi before their whole bodies, but particularly their backs, were bitten and badly swollen. In spite of the pitiful appearance presented by these poor wretches, there was nevertheless something uncommonly ridiculous when one of them hit another on the back with the flat of the paddle or of the hand as soon as a crowd of blood-suckers had collected on the man in front. Without turning round, each man was grateful for the smack he got from the one behind, because he knew what it was meant for. The slightest current of air springing up drove the persecuting wretches away for a second, but as soon as it died down again we saw and felt them around us with redoubled sanguinary dispositions. To afford the poor naked Indians at least some little relief, we searched our certainly very plain wardrobe and supplied them with shirts. The insects were likewise equally unpleasant owing to their continually creeping and flying into the mouth, nose and eyes.

778. I have never succeeded in finding again any river that possessed so many inland bays (*Buchten*) as the Rupununi. These kirahaghs* as the Indians call them, are for the most part fairly narrow at their point of junction with the stream, and only widen out some way inland into considerable basins, the play- and spawning-grounds of a number of fish, kaimans, and water-fowl, which latter either fly around such bights in large swarms or remain perched on the trees surrounding them. Almost all families and genera of swamp and water fowl were represented here: *Ardea, Platalea, Cancroma, Carbo, Plotus, Alcedo, Rhynchops, Numenius, Larus* and innumerable chains of duck bestirred themselves round about over and on the water or, screaming wildly, darted through the air. The kaimans, only a single specimen of which we had caught sight of in the Essequibo, were seen in the Rupununi, but particularly in large numbers in the kirahaghs where they swim around by day looking like floating tree-trunks. How and by what means these inland bays have arisen we have not exactly been able to find out. Were their openings directed against the stream, one would not for a moment have any doubt over the cause of their origin, but these are almost universally directed down

---

* The present-day local Indians do not apparently recognise them under this name the Wapisianas speak of them as Karsia, and the Macusis as Kúba. (Ed.)

stream while the uninterrupted bank-wall allows of them being just as little regarded as old channels or river-beds. The few examples that have their openings directed really contrary to the current are to be recognised already from a distance by their extraordinary wide mouth, which often exceeds the bed of the river itself.

779. Several others having unfortunately joined our two patients by getting sick also, my brother considered it wiser to give the hands a day's rest again. We accordingly made our way into the large Aurimé bight situate on the western shore, and soon found an excellent spot on the raised bank, without doubt the situation of an earlier extensive Indian settlement, as was easily recognised by the contrast in the size of its trees when compared with those of the surrounding forest. *Mimosae* and *Solanaceae*, in conjunction with cutting grass 10 to 12 feet high built the most impenetrable thickets and an actual "Noli me tangere" in those spots where *Manihot, Dioscorea* and *Musa* were previously planted and of which now no more traces remained. It is a curious phenomenon that among cultivated plants in former dwelling places I have only found the stunted offspring, though one would be inclined to believe that those which have already reached a certain stage of growth could not have been so completely suppressed and crowded out by the first sprouting *Solanaceae, Mimosae*, and *Passiflora*—and yet this is generally the case as soon as a settlement has been abandoned for a few years.

780. In spite of the attempts immediately made upon landing to get possession of one of the kaimans floating around, I did not succeed in doing so, because the bullets rebounded ineffectively from off the hard armour-plate, and in a few cases the wearer of the same did not even think it worth while to alter its situation and position, while in others it swam very leisurely away. But if we wanted to get near them in a boat, so as to obtain a sure target in their eye-sockets, they disappeared indolently and slowly beneath the surface of the water. Remaining quite quiet by day the animals seemed to have collected strength solely for the diabolical noise at nightfall, for hardly had the sun disappeared than the wild uproar also begun. Our boats appeared to attract their special interest, because they approached them so closely as to make some of the Negroes and coloured people who proposed spending the night in them jump out pretty lively: the would-be occupants preferred slinging their hammocks under the trees. Hamlet and Stöckle, manifestly the biggest cowards of the whole expedition, frightened at this, did not consider even their own camp, that up to now had been pitched close to the waterside, sufficiently safe, but untied their hammocks as quickly as possible, and only slung them up again far from the bank. Stöckle admitted to me next morning that he had been unable to sleep a wink on account of his trembling and quaking so much, and that he had damned the b...... beast to hell, because all night through, it had been thumping the boat with its big tail and screaming away like a bittern; he thought nothing else than that his end had come.

781. The morning dawned on Sunday, and after prayers were read, I strolled along the banks with Stöckle and found many an interesting plant among which I will only mention the dainty *Ionidium oppositi-*

folium Schult., the *Coutoubea spicata* Aubl., *Tamonca mutica* Pers., *Spennera aquatica* Mart., *S. circacifolia* DeC., *Pectis elongata* Humb. Bonp. and *Trichospira menthoides* Humb. Bonp. Amongst bushes appeared *Coffea calycina* Benth., *Helicteres guazumaefolia* Humb. Bonp., *Waltheria involucrata* Benth., *Eugenia Schomburgkii* Benth., *E. polystachya* Richt., *Acacia Westiana* DeC. and, for the Indians, the very important *Lonchocarpus densiflorus* Benth., with the milky pungent root-juice of which these people stupefy the fish. When the Indians want to carry out a poisoning expedition, they smash and squash up the roots beforehand with huge wooden clubs and throw the mass into the water at those spots where they notice the fish to be plentiful; in about 10 to 15 minutes its effects are visible upon the scaled denizens. They rise to the surface, spring out of the water, gasp for breath, and then turn belly upwards, in which condition they are caught by hand or shot with the arrow. The small finger-long fry usually die while the larger fish generally recover after a time. Besides the *Lonchocarpus densiflorus* the Indians also use for the same purpose the *Tephrosia toxicaria*, *T. cinerea* Pers., *Phyllanthus Conami* Sw., and *Clibadium asperum* DeC.: none of these plants shows itself as effective as the *Lonchocarpus*.

782. The hunters were just as fortunate on the chase as I had been on my botanical trip, for they not only brought several Aguti but also the tasty *Tetrao* and equally dainty *Psophia crepitans* back to camp, the site of which they found again as accurately as if they had been conversant with these forests for years, although they, like ourselves, had only set their foot in them for the first time to-day. A peculiar form of ants' nest, which I mostly found on the trees in the angles of the branches with the trunk, also had considerable interest for me. It had quite the shape and size of an average gourd, and was constructed out of small leaf particles and clay. Thousands of the insignificant dark inhabitants lived together in one nest, and on the least movement fell upon the person passing along below or upon the ground.

783. We were to learn this evening that the Indian has a talent for ragging, and possesses a certain degree of mischief. With fairly evident signs of scorn and contempt they had already noticed since yesterday how Hamlet, a man whom they already could not tolerate as a Negro, was so terribly afraid of the kaimans. We, others, were apparently all lying in our hammocks, and only Hamlet had still to clear away this and that of his wares, when he also put the last piece aside and with a contented countenance hurried off to bed. A frightful cry for help suddenly reached us from there. We all anxiously jumped to our feet and rushed to the spot where we found the poor devil shivering in all his limbs and his eyes starting out of his head; he was standing close to his hammock as if rooted to the spot. After a long fruitless enquiry as to what was the matter, he finally shouted out that there was a live kaiman in his hammock. Smiling at the silly imagination of the miserable wretch we went to examine it with lights so as to convince him that his fears were groundless, and really found in it a reptile four feet in length; it had been shot in the course of the forenoon by some Indians, and had got a long bush-rope tied to its legs.

One of the practical jokers had probably dragged the animal into it, waited for the owner to come and lie down, and at the very same moment pulled on the rope, but had then made himself scarce because we never succeeded in finding the culprit. Although the poor black devil was able to convince himself that he had only been made a fool of, he continued standing there in the same spot where we had found him shivering like an aspen leaf and crying like a child, and no power on earth could have got him into his hammock now. We were at first angered over the silly joke, but nevertheless had at last to join in with the general laughter that rose through the whole camp. In the morning we found that Hamlet had quietly sneaked close to us where he had made a camp for himself; fearing a repetition of the banter he probably did not feel too safe anywhere else.

784. Our patients feeling somewhat improved by the Monday, we resumed our journey and found upon the sandbanks even yet numbers of turtle eggs, which however had to be fairly carefully examined before eating, because in the greatest number of cases the young animal had already begun to develop.* Towards mid-day we once more reached a settlement, this being occupied by Caribs and some Macusis jointly. The large houses of the Macusis varied completely in shape and construction from all Indian houses that I had hitherto seen in the coastal region. They were erected of four six-foot high clay walls, upon which the roof rested and the small door was the only opening to be found in the whole building. Had not a fire, above which a small frame with fish and flesh spread out on top was to be seen, been burning in the centre of the building and at least lighted it up somewhat, Egyptian darkness would have reigned inside. The door was exit and entrance not only for human beings and animals, but also for smoke, light and air. The Carib houses corresponded entirely with those of their fellow-tribesmen elsewhere. Of the male residents we found at home only the chieftain and another man, both of them very aged people; all the others had taken a trip to Georgetown. Amongst the women, painted to an unusual extent with *Genipa* juice, Sororeng drew our attention to a young and very pretty one of whom he told us a fact that really betokened something more than ordinary female strength of character and endurance. Her husband had also undertaken the trip to town with the others and had made up his mind for her to accompany him, a proposition that she resisted with all her might and main, but to which she at last apparently was forced to submit. Even at the eleventh hour she showed every imaginable sign of opposition so as to move her husband to let her stay, but he was not to be shaken in his resolution. In vain they searched for her one morning in Waraputa where the party spent several days; the young woman had vanished and remained so. Through the densest of forests, across all torrents, rivers,

---

* Among the plants I found in this area of the Rupununi I may note here the beautiful *Petrea macrostachya* Benth., *Copaifera pubiflora* Benth., *Pithecolobium pubescens* Benth., *Jussiaea affinis* DeC., *Schnella rubiginosa* Benth., *S. splendens* Benth., *Licania aperta* Benth. *L. floribunda* Benth., *Faramea longifolia* Benth., *Alsodeia laxiflora* Benth., all new species which my brother had already found on his first journey.

and streams, she returned to the Rupununi by way of the western bank of the Essequibo. Over pathless areas, and without further nourishment beyond what the bushes and trees offered her, she performed the journey in nine days when, after having had to swim across the Rupununi, she suddenly appeared in the village dead-tired, and torn to pieces with the thorns and cutting-grass; besides this, the heroic woman was all the time momentarily looking forward to her confinement. We had required three weeks for the same trip. Sororeng at our request learnt from the woman, upon whom, owing to this report, our whole interest was naturally centred, that she had always kept the Essequibo on her left, but with that had cut across all bends, so that she had, of course, reached the Rupununi much sooner than would have been possible by travelling up the stream. She at the same time assured us that beyond the belts of rock she had met with no special difficulties. Certainly the welcome that she received from her husband on his return could not have been quite the friendliest. On my return to Georgetown I wanted to pay her another visit, but found the settlement abandoned and the place already wholly restored to Nature.

785. We learnt from the old chieftain that the Brazilians were not only still in possession of Pirara, but had led all the Macusis of the village into slavery, which latter information, however, was not subsequently confirmed. Naturally, having to accept the news as true, and the expedition bearing despatches wherein the arrival of the armed force would be notified to the Brazilian commander, my brother took some of the crews out of the other boats so as to reach Haiowa village, which still lay two days' distant from here, as quickly as possible; he hoped to be able to make more definite enquiries there. After a stay of several hours we left the settlement and my brother's corial soon disappeared out of our range of vision.

786. The banks of the Rupununi rose more and more, but in certain situations, as soon as the general precipitousness relaxed but a little, were nevertheless covered with vegetation down to the water's edge. When at night we wanted to pitch camp we had first of all to cut a path up to the top of the slope.

787. Hardly had we started on our way next morning when we saw a number of Indians garbed in their most beautiful finery standing in front of us on the bank; they seemed to be expecting us, as indeed happened to be the case. They had probably heard casually from the Indian crew of the corial hurrying ahead, that we would soon be following, and now wanted to see us pass. Besides the really artistic feather-hats (Arro) the men wore particularly big necklaces (Poeng-Kere) of *Dicotyles* fangs, from which long tassels of toucan skins hung down their backs. Their huge and elegantly worked war-clubs which they called Taiken attracted the whole of my attention, and the wounds inflicted by them upon one another in battle must be frightful. Attached to the handle, that was wound round with cotton thread with long cotton tassels hanging down as ornaments, was a thick sling of the same material through which the hand is stuck so as to make it impossible for his opponent to wrest the

club from the owner while fighting. Although I offered them knives and other objects for the clubs, they refused to part with them though they willingly bartered the elegant feather hats. Their settlement lay several hundred paces in from the waterside, but the time did not admit of my accompanying them there.

788. Wherever the foliage of the banks became thicker, the branches swarmed with monkeys, of which the really pretty bushy-tail Hurua apes (*Pithecia chiropotes* Geoffr.) constituted the greatest number. The beautifully-parted long hair and abundant proud beard and whiskers, which on my return I hardly found surpassed by those of young Germany, as well as the long-haired fox-like tails, lent the lively intelligent looking animals an unusually friendly, but at the same time comical, appearance. Being the first seen on my trip, I naturally had to jump on land and try my luck in hunting which on this occasion proved successful. I shot a male and female, though almost regretted my action on hearing the latter's pitiful yelp of agony, enough to pierce one's heart, she being only badly wounded: it sounded exactly like the bitter cry of a child in pain. The beard of the female is not so thick and long, neither is the tail so bushy as that of the male. I never met them again so plentifully as here on the Rupununi. The howler monkeys (*Mycetes*) already before sunrise, and always squatting with their faces turned towards it, commenced their horrible noise from the highest tree-tops: at sunset they sang it a deafening slumber song. It is extraordinary that the *Mycetes* are never found associated with other species, but keep strictly apart from the remaining light-footed gentry. This is also the case with *Pithecia chiropotes* and *P. leucocephala,* while the roll-tail apes *Cebus apella*, *C. capucinus* and often *Callithrix* are found in company. The flesh of the *Mycetes,* except for the peculiar smell which is like that of our billy goat, is fairly tasty. It is only after the Indian has scalded or singed its hair, and put it in the pot, or, for purposes of roasting, has stuck it on a wooden spit, that one's antipathy is roused on seeing it in this condition for the first time. One cannot but believe that he must be sharing a cannibal feast at which a little baby is being set before him, and it certainly requires great strength of mind for anybody with a stomach at all sensitive to take knife and fork to such a dish. After I had skinned my *Pitheciae* the carcases were claimed by the Indians for their breakfast, to supplement the tail of a young kaiman that they had killed during my absence This latter spoil seemed to me nicer than I had expected; the cooked flesh looked snow-white, and had quite the taste of the larger fish.

789. The palms now became more plentiful, there soon being associated with the genera hitherto exclusively prevailing a number of *Bactris, Geonoma, Maximiliana,* the elegant *Euterpe edulis* Mart. and the peculiar *Desmoncus polyacanthus* Mart., which cannot keep upright of itself and accordingly has to cling on to other trees and bushes with the sharp barbs of its leaves, if it wants to raise its lanky top heavenward, and not creep along the ground. The latter is certainly just as dangerous as the "pimpler" palms and often enough, in following up game on my hunting excursions, has it held me back at the cost of much

agony or a portion of my light clothing. Wherever the bank was low it was thickly covered with guava bush that spread its smooth branches far over the surface of the water.

790. A huge sandbank offered us a comfortable night's lodging, an invitation that we gladly accepted because we were anxious to strike camp soon after midnight, so as to reach the Macusi village of Haiowa early in the morning. The peculiar noise produced by the Muscovy duck (*Anas moschata*) on starting to rise, indicated already before landing, that our approach must have driven off whole flocks of them from their resting place. Everybody seized his weapon on hearing the well-known sound and as they flew over our heads the general salvo brought down a brace. They were two males of unusual size, and at the same time proved a welcome addition to supper. The Indians just in the same way shot some *Plotus*.

791. About midnight I called out to the captains to strike camp. The moon diffused her bright enchanting light over the stream now smooth as a mirror, as well as over the densely-foliaged banks, while except for the measured stroke of the paddles, nothing disturbed the deadly silence that reigned throughout the whole of Nature. We might already have been travelling a few hours when through the oppressive sultriness a cooler breath of air, which the Indians welcomed as the refreshing savannah breeze, blew suddenly towards us. This often uncommonly violent wind is in the interior what the cool sea breeze is on the coast, because like it, it springs up daily. It usually rises of an evening about eight o'clock as a soft cooling north-easter, which towards midnight reaches its maximum strength when, like a whirlwind, it sweeps over the savannah, then gradually takes off towards daybreak, and at sunrise suddenly veers round to the eastward.

792. Now at last, after a period of five weeks' continuous restraint within dense natural walls, for which we had been compensated only occasionally by the prospect of a more or less remote mountain-range, our eyes were to ramble free and unrestricted over a wider area, and it is of no use denying that I waited with impatience for break of day, for the far-reaching savannah where, so often subsequently, I disconsolately turned my gaze towards the distant horizon to discover a dark fringe of forest. With the approach of dawn, things around began to hum, in that the members of the thousand-voiced concert party started trying their voices, the curious deep drumming of the hokko-hens that was heard repeated on all sides affording us the first sign of it. The overture commenced, and in it were soon joined notes of all kinds, high and low, from out of throats known and unknown, amongst which the yelling screams and whistles of the swarms of monkeys played the chief part. It seemed as if the latter were reminding their still sleeping comrades that the day was breaking. What with the uproar amongst the branches of the trees indicating that a pack of them was just then advancing along the opposite side, and the deep bass notes of the hokko-hens sounding far too temptingly, I could not remain any longer in the boat. With gun in hand, accompanied by an Indian, also with his, we jumped on shore and made our way into the gloomy forest. We soon saw two hokko-hens

perched upon the lowest limbs of a tree ahead of us; they were just drumming their welcome to the dawn. As quick as thought we up with our guns but waited in vain for the report—the night dew had damped the loading and the birds did not wait for us to refill. A gradually increasing chatter in the branches betrayed the approach of a troupe of monkeys taking the high road over our heads, and pressed close to a tree we lay in wait. First came the advance forces, and then the main army which took perhaps a quarter of an hour to pass; this was followed by the rear-guard which, through my laughter that could no longer be suppressed, scattered in all directions. But who could help laughing if he saw the sprightliness of the nimble creatures skipping along over the branches in exaggerated haste, and heard the crying, the piping, and the whistling of the weaker ones, or noted the malicious looks these threw at the stronger specimens which had bitten or beaten them for getting in their way; if he watched the precocious faces of the youngsters regularly glued on to their mothers' backs and at the same time observed how earnestly they searched for insects on every leaf, in every crevice, as they passed along, and noted how cleverly a flying beetle, or a butterfly would here and there be caught upon the wing? It was with antics such as these that some 4 to 500 *Cebus capucinus* and *C. apella* must have hurried past up above us, for they did not seem to understand any other kind of motion at all, before I could restrain my risible instincts any longer. As if thunderstruck, as if held by magic, the individuals that happened to be directly over our heads sat stock-still for a moment, uttered a peculiar cry that found its echo in front, behind, and close by, and then looked anxiously around in all directions until, on recognising our presence, they stared at us for a second, repeated their cry still more shrilly than at first, and in redoubled haste regularly sprang away, without any other sound being heard than the extra clattering in the branches. If we wanted to take at least a hunting trophy back to the boats, it was now the best time to shoot. With the heartrending screams of one with its front paw smashed by small-shot, and of another that was mortally wounded, several indeed of those that had made their escape returned; upon noticing us, however, they deemed it wiser to rejoin the precipitate rout and leave their comrades to their fate. After long and vainless attempts to follow the others, a somewhat too risky spring at last brought down both the wounded; they fell just between the two of us. The fright of the one must indeed have been terrible: sitting on its haunches, with widely opened jaws and unable to utter a sound, it glared at us for a while, and then ran off and tightly clutched its dead mate lying not far off. Docile and without a struggle it allowed us to tie and bring it to the boat where we splinted and carefully bandaged the smashed limb. It submitted to the operation without a growl or sign of resistance and only gave a short cry of agony with a truly beseeching and pitiful look when the pain got too bad or the bandage was put on too tight. On completion of the ordeal it ran under my seat in the boat and kept quite quiet, continuing to look at the dressings all the while.

793. The vegetation along the left bank was already gradually becoming less and less dense and the cool refreshing wind always stronger

and more comforting when the former all of a sudden disappeared completely and the broad savannah reached down to the riverside. A halt was now called and we quickly climbed the steep bank, not for our eyes to ramble over the broad expanse but only to be still more obstructed by the grass more than six feet high. Owing to its thick growth, and the still denser virgin forest near by, we could see nothing but the isolated Makarapan Range, probably rising from out of the immense plain, with its reefs and ridges just in the act of being fringed with gold in the early sunshine, as well as some other mountain chains towering over one another like terraces in the far north and east.

794. That the calorific rays of the morning sun exerted increased vital activity in the plants was demonstrated to us on our return to the boats by the balsamic fragrance that had distributed itself through the whole atmosphere. In the midday hours this generally disappears completely.

795. We soon afterwards passed on the right bank the mouth of the Taraqua (Rewa or Quitaro of the maps), one of the largest tributaries flowing into the Rupununi. According to the statements of the Indians it arises on the northern slope of the Carawaimi Range, then turns towards north-west through the mountain chain of the Sierra Taripona, now flows in a half circle round the foot of an extremely remarkable granite pyramid which the Indians call Ataraipu (Devil's rock) and shortly afterwards joins with the Rewa that comes here from the south-east, whereupon they continue their combined course to the Rupununi. The district between the Rewa is thickly forested and quite uninhabited.

796. We had not left the mouth far behind when suddenly an uncommonly lively scene presented itself before our eyes: a party of Macusis seemed to have just struck camp and were about to resume their journey up-stream in three corials. I gazed in astonishment at the motley crowd, and the active bustle in its heterogeneous composition, which formed the most faithful pendant to some gipsy encampment such as at the present day only Spain possesses. Red-coloured hammocks in which many of the worshipful house-masters were still lying at their ease and whence they were comfortably watching the strenuous efforts of the women dragging the remaining objects to the boats, were slung in between the green trees or else upon stakes driven into the ground. Over there, small boys were pulling a refractory monkey by the leg towards the corials: over here, a little girl was hurrying with some parrots in the same direction. Women with sucklings that huddled in a sling hung over the left shoulder, were carrying in their freed hand the dull and blackened kitchen-ware to the boats where ill-tempered dogs squatted in the bows and hoarsely barked at us. Blue columns of smoke from out of the ash-heaps of already burnt-down fires rose here and there in the calm atmosphere and spread out their capitals in between the riverside foliage now moistened with the morning dew. As soon as the men noticed us they very quickly got out of their hammocks, put on their lovely feather hats, came to the bank, stared at us in surprise, and called out "Matti," a greeting that we heartily responded to.

797. Just as the Indians had had their turn of staring at us, so it

was soon mine to stare at a plant which with its leaves and blossoms showed up conspicuously from out of a small currentless bight. It was the magnificent *Victoria regia* Schomb. with its rounded leaves from five to six feet in diameter and its beautiful huge flowers: the petals from periphery to centre merged from white through a series of the softest of tints to a moist rosy red, and filled the whole neighbourhood with their lovely scent. Stöckle and I at the same time quickly bent down over the edge of the corial to break off so wonderful a blossom when, as if bitten by a tarantula we speedily withdrew our hands, our thoughtless haste receiving a fairly painful lesson from the ¾-inch long sharp but yet elastic spines. As my brother has already exhaustively described the whole plant I refrain from further details. A number of water-fowl, duck, and small heron ran around on the plate-like leaves and gave chase to many insects that seemed to collect there. In silent wonder I gazed upon this rare plant, and only after a long while cautiously possessed myself of some of the blossoms by means of a cutlass, though it was unfortunately impossible to dry them. It was surprising that among the rich number of specimens not a single young plant was to be seen.

798. From now on the western bank was enclosed with a smaller wooded border to which the savannah was directly joined; the eastern one on the contrary remained thickly forested. We had just turned a sharp bend when from the foot of the approximately 30-foot high bank we saw Haiowa* rising on the summit and my brother's flag waving towards us. A number of Indians who were pressing close around one of the buildings indicated yet from the river the exact spot that my brother was occupying. After fastening our boats at the landing and climbing the height, I was at a loss to know in which direction I ought first to turn my attention because, while captivated by the charming surroundings of the village, the beautiful outlook over the savannahs spreading far to the northward was tempting me to peep in the distance. A number of small groups of foliage trees, bushes or palms were dotted here and there over the immense yellow-green grassy plain, like pleasant islands in an ocean waste, while the mighty isolated 4,000 ft. high Makarapan Range rose from out amidst this lovely landscape and the bleak Sierra Pacaraima with its 1,500 ft. high eastern spur limited the extensive view. The Pacaraima Range extends pretty well 200 miles to the westward and forms at the same time in the north the watershed between the basin of the Orinoco and the Essequibo, in the south that of the Rio Branco, a tributary of the Amazon, as well as the boundary line between the immense savannahs of Southern, and the luxuriant virgin forests of Northern, Guiana.

799. In the settlement itself the liveliest activity reigned, for my brother in the spacious strangers' quarters, which, like the houses on the coast, was open on all sides, was just then busily engaged in paying for the large quantities of cassava bread, plantains, yams, bananas, fowls,

---

* The site of this settlement is said to have been on the left bank opposite a spot known to the present-day Macusis as Addáwa (Ed.)

smoked fish, etc. that the bucks and buckeens had brought forward. Like the pedlar at the annual fair of a country town around whom crowds of strong and lusty peasant girls collect and glance with wistful eyes at all the glittering but worthless gew-gaws spread before him, so stood my brother behind his many boxes filled with motley-coloured glass beads, knives, scissors and other trifles surrounded by the light brown but beautifully developed buckeens, who gazed with longing looks upon the tempting beads, the only articles that almost all of them wanted. The woman will sell everything for beads, which constitute her sole finery, while the man, like a peacock, will decorate himself with the most motley-coloured plumage of every feathered occupant of the forest. The greatest ornament of the Macusi Indian woman—for the acquirement of which she redoubles her exertions in the field, because all the fruits of it that are not wanted in the household can be sold by her to procure these showy things if nothing else is required—are the wide strings of beads which she wears wound around her legs and arms, and out of which she makes her apron-belt.

800. Without doubt the Macusis, whose district includes the savannahs of the Rupununi, the Parima, and the mountain chains of the Pácaraima and Canuku, belong to the most beautiful tribes of Guiana, just as they likewise constitute at the present time one of its most numerous ones. Their skin colour, like that of the Arawaks, is tolerably light, and with it their features have something uncommonly gentle and pleasant which is more or less enhanced by the Roman, Greek or Mulatto nose. Their figure is slender and generally well proportioned. The men wear their hair almost always short, the women on the contrary having it nicely tidied and hanging down over the neck and shoulders or else rolled together in long plaits wound on top of the head. Their speech is something unusually euphonious and has much resemblance to French, the largest number of their words ending in —ong, —eng, or —ang. That they are an unusually peaceable tribe is already confirmed by the circumstance that all the slave raids by the Caribs and other tribes were made in the territory of the Macusis, as in more recent times similar raids were made by the Brazilians. Peaceable and harmless as is the tribe, it showed itself equally as obliging, hospitable, and industrious during our lengthy stay in its settlements, and it possesses one rare superiority shared by only a few others, its great love of order and cleanliness. Polygamy is certainly practised, though one finds it but very rarely. They also colour their face and body thickly with *Bignonia Chica* and *Genipa Americana* paint; the women, who are not less indifferent to finery, particularly do this and try to increase their natural beauty as much as possible by external artificial means, in which connection they set an especially high value upon their long and beautiful brilliant black hair which one always finds cleanly combed and anointed with crab oil. Their ear lobes and, among the men, the nasal septum, were bored. In the holes the men wore the finger-long round little bits of stick or thin pieces of cane, and I noticed among both sexes, without exception, a small round opening in the under lip through

which, as in the case of the Caribs, a pin with the tip outside was stuck. Several women wore gold coins on their bead necklaces, a demonstration that they knew the value of money a little or not at all: amongst the coastal tribes one might search in vain for such a decoration. The apron-belts (Mosa) of the women consisted of a sort of bead embroidery, with pretty angular figures *à la Grec,* which had some resemblance to those hieroglyphics that we found in Waraputa. These aprons seemed to be their greatest pride, just as they also constituted their chief finery. One also saw similar figures, painted roughly with the fingers or a piece of wood, in white clay, in red or black colours, upon the walls of the houses, on the paddles, corials, weapons, etc. It is strange that it is only the women who do the painting. Is the man ashamed of the art, or does the woman only possess the talent for it? When my brother on his previous journey was staying with the Tarumas, they informed him that the picture writing, which he discovered there on several of the boulders lying round about "had been cut in by the women ages and ages ago." As soon as the husband has finished an implement of any kind, a weapon or similar article, he hands it over to his wife who now starts on its artistic complicated painting without any pattern or other guidance than her own inborn individual love of art as it were.*

801. The settlement consisted of twelve houses with about 60 residents. The houses for the most part corresponded with those already met with on the Rupununi and only a few that were not quadrangular but round varied from them in regard to model. If a new structure, whether a square or a round one, is to be built, they drive seven-foot high posts into the ground fairly close to one another, plait these together with thin laths and then fill in the interspaces with wet clay. The rafters that correspond exactly with those of our own simple buildings except that they are not fixed with pins but tied together with the toughest bush-rope, are carried upon some big posts raised in the middle of the house. The leaves of the *Maximiliana regia* form the roof. The quadrangular houses called to mind our small peasants' huts covered with straw. The roof of the round (bee-hive) houses (*Hauserthürmchen*) is also round and runs up into a long point ending at the top of the central main post on to which the remaining rafters are tied in a circle at their upper ends, while their lower ones project considerably beyond the sub-structure and so give the building the appearance of some Chinese construction which, with its elegantly sloping roof, makes quite a pretty picture.

802. Having already described the interior of such a building I will only add that the whole household furniture consisted of hammocks woven out of cotton thread like a net with large meshes; small wooden stools that, cut out of a piece of wood, represented rough similes of all kinds of animals—but were almost only used by the women, as the men preferred squatting on their heels; hollowed-out calabashes of all shapes

---

* It is to be feared that, beyond the painting of the earthenware, this statement of the decorative work being limited to the female sex is based on insufficient evidence. (Ed).

and sizes that served as water-holders; together with some simple clay cooking utensils and a number of square plaited baskets in which they store their ornaments, bits of clothing, when they are so fortunate as to possess any, and gew-gaws of other kinds. On the hammock there also hangs the owner's toilette which consists of a piece of bambu filled with rouge-paint, a comb, and a small looking-glass; the European frame is generally removed from the glass and replaced by a new and more durable one in which this costly article of finery has less chance of being broken. The main beam of the house is usually decorated with the hunting trophies of the owner: deer-horns, jaguar skulls, eagle claws, etc., and together with them the war-clubs, the curious blow-pipe and the feather hats are hung on it. The innumerable arrows and a number of bows lie on the cross-beams. Judging from the large quantity, as well as from the neatness and accuracy with which everything was manufactured, it was very evident that this tribe must be far more industrious than the coastal ones. The whole of their wooden implements were neatly polished and painted, their weapons ornamented with motley feathers, and their plaitwork so well made in respect to the designs worked in with red or black, likewise *à la Grec*, that the best European professional workmanship could hardly match them for neatness, but certainly never as regards durability. That their household implements and their ornaments, irrespective of their utility, have a special value in their eyes, from an artistic point of view alone, can be recognised in the fact that they only saw their way to bartering them when they inevitably required some European article or other. To barter a blow-pipe was still more difficult, probably due to the reason that they only get these from the Arekunas and Maiongkongs in exchange for their frightful vegetable poison Urari on which they accordingly set so high a value because the plant only grows in certain spots on the Canuku range (Sierra Conokon.) It is at all events striking that the neatness and accuracy both of weapons and implements as well as a livelier industrial activity in general becomes always more distinct and evident, the farther one penetrates from the coast into the interior.* Only in one manufacture—pottery ware—are the occupants of the latter inferior to the former. Inside the houses, at different spots, small fires are continually kept burning, either under a small staging covered with the cut-up produce of the chase so as to get it smoked, or between three stones upon which, like our tripods, rest large pots to boil possibly some drink or bit of meat. Snarling dogs lie in close circles around these fires like faithful watchmen.

803. As our party consisted of 48 head, and we proposed staying several days, there developed to be sure an otherwise probably unusual hustle and bustle in the little village which already had received word of our arrival from a family that were just returning home to Haiowa as we landed at Waraputa. We accordingly met with an abundant supply

---

* The reason is very probably due to proportionately less intimate contact with inferior races, *i.e.*, the negro and low-class European. (Ed).

of cassava bread, etc., already mentioned, and to their very great joy, our Indians found a huge trough filled with paiwari and many a vessel with casiri, to both of which they diligently did justice. The information we had received in the previous settlement, according to which the Brazilians had made slaves of a number of Macusis, proved to be false; we were, however, indeed assured that several soldiers were to be seen in Pirara and that all the former residents, with the exception of two families, had withdrawn to the Canuku Range.

804. The house with which we were accommodated for our residence lay immediately upon the summit of the high bank and permitted the most unrestricted outlook over the lovely and delightful landscape at our feet. By next morning we received a surprise, with a new change in the life of our surroundings. Soon after sunrise, that is to say, a small fleet of corials manned by Indians, with brilliant feather ornaments, came down the stream otherwise so abandoned and lonely, and stopped at the Haiowa landing-stage to pay the residents a visit on their way to Georgetown, where they intended going with the produce of their industry, *i.e.*, spun cotton, hammocks and the like. After getting out of the boats and arranging themselves in the usual procession with war-clubs, bows and arrows in their hands,—while many yet had stuck a long knife under the lap-cloth belt or else had it hanging from a cotton cord round the neck like a bandolier,—they clambered up the bank, and, without condescending to recognise us, passed on their way to the strangers' house where the chief with his people was already awaiting them. The salutation ceremonies, of which I had already been witness during my stay among the Warraus and Waikas, were repeated here in almost similar fashion, except that here those who were talking did not look at one another, but engaged in conversation with faces turned aside. When I enquired the reason, I was told that dogs might look at one another when they met, but Macusis didn't. If a Macusi comes into ordinary intercourse anywhere with another, he just says "I come," to which the other replies, "Art thou there?" or "Comest thou?" But if a ceremonial visit is being paid by a foreign tibesman or equal in rank the visitor has to be addressed first; if there are several, then the same questions are repeated, according to the dignity and age of the stranger. The chieftain or housemaster welcomes the solemn and slowly approaching guests at the front of the house near the door and bids them enter. When the strangers have got inside, the mistress of the house brings forward a stool or a block of wood and the master says: "Be thou there," whereupon the guest replies "I say, yes," and the former now adds: "There's a stool, sit down." The stool will now be described by the owner as bad, whereupon the guest continues "It is good," and adds still other encomiums, compliments and greetings which are renewed with every visitor. As the wife first of all sets before the visiting chieftain a little basket with cassava bread and pepperpot into which the former is dipped, the same apologies, the same compliments are repeated. Each having eaten, the particular scene is renewed with the calabash full of paiwari or casiri. Upon the stranger chieftain finishing his meal he assures each of his fellow guests that he is satisfied, an assurance which

the host also receives. The same thing happens with the others, who make the same declaration at first to the visiting chief and then to the remainder participating, according to their status and age. If, however, one of the guests during the gathering, is forced to go outside, he will be welcomed on his return just as if he were only come for the first time.

805. The conversation was generally carried on in a sing-song, one might almost say, plaintive tone and the acquiescence in the credibility of, and astonishment at, the narrator was expressed by the repetition of the last words with the addition of "Na" or "Wa."* The younger Indians constitute only the audience, and although they have heard the thing twenty times already, make believe that they are extremely astonished at what is said. The departure is accompanied by the same ceremonial.

806. Though such a scene offers so little variety, it is by no means uninteresting, and I have always been glad to see and hear their salutation ceremony and talk-talk, particularly as they are the exact reverse of our European pour-parlers, for over here one encourages the speaker at most with a "Wa" or "Na" or "Uná," but never interrupts him. The adventures of the chase, and fishery, and their travels are naturally the main subjects of conversation when they will correctly define each place and tree where they caught this or that game, and this or that fish, or where they built their benabs, etc.

807. Next morning the Indians brought us, besides a number of other fish, the fresh-water giant of Guiana, the *Sudis gigas* Cuv., the Arapaima of the Macusis. We gazed in astonishment at the huge monster that almost filled the whole of the corial, measured perhaps eight feet, and certainly ran up to 200 lbs. in weight: among the rivers of British Guiana, the Rupununi is the only one that possesses it, and in considerable quantities, too. In the Rio Branco, Rio Negro and Amazon it is said to be also fairly plentiful. The Arapaima is both caught as well with the hook, as killed with the bow and arrow; in the latter case, its capture is undoubtedly one of the most interesting and liveliest of the fisher's art, for several corials generally take part in it and distribute themselves over the water. As the fish is recognised, the signal is given. The corial with the best shots noiselessly makes its way up to within shooting distance, the arrow flies from the string, and both it and fish disappear. Now they all join in the hunt, and the arrow's feathered end hardly appears above the surface again before everyone's bow is on the stretch: the fish is seen and stuck with a new lot of arrows, passes out of sight, to allow itself to be recognised again within a shorter interval and so receiving fresh charges, at last falls a prey to the hunters. It is now floated to a shallow spot, the corial that has been filled with water, and pushed underneath, is then bailed out, and the monster brought in triumph to the settlement. The fish has one of the most variegated scaly cuirasses imaginable, for not only the scales, but also the fins differ in colour and shine in the most varied shades of dark grey, red, and carmine. Although very tasty it is not eaten by the Macusis, but is relished all the more by the Caribs.

---

* Na is the Macusi affirmative: Wa, amongst other meanings, expresses something of the idea of "Right! O!" (Ed.)

808. Among remaining fish to be found here is the equally brilliant *Osteoglossum bicirrhosum* Spix., which the Macusis call Arowana, with the edges of its scales also shining in red, blue, and purple, the *Xiphostoma Cuvieri* Spix., the *Myletes latus* Müller, Trosch., *Pygopristis fumarius* Müller, Trosch., *Serrasalmo aureus* Spix. and several representatives of the genera *Cichla, Crenicichla* and *Pygocentrus.*

809. This very same day that had dawned so full of interest for me, was to close in just the same way. It was late in the afternoon that I was yet in front of our house busily engaged in cleaning the head and preparing the skin of the *Sudis* when I noticed some dark columns of smoke rising in the distant north-west, but troubled myself no further until Sororeng again drew my attention to them by the statement that the hunters of a distant settlement over there had fired the savannah to drive the deer out of the high grass. The sun was just beginning to disappear, and the black clouds, now increasing in extent, were already coloured yellow and reddish, when there soon developed before our astonished gaze a night picture that can only be compared with Achramucra, but which it is just as impossible to describe in detail. All I can do is to plan an outline, a sketch of the really thrillingly beautiful scene of the burning savannah: it served to represent the real article as depicted in Cooper's prairie fires that had so often filled me with silent rapture and inward awe. The eye could now distinguish in the far north-west several pillars of fire that gradually joined into one single column which, sharply defined on the dark background of the clouded sky, shed a grey-yellow tint upon the overcast masses of cloud as well as the gloomy Makarapan and Pacaraima Ranges, and made them look like pallid spectral giants emerging from the sombre layers of atmosphere. As quick as thought I might say, the huge mass of fire rolled itself along before the wind like the billows of an evenly moving ocean, and a moment later, the hills or groups of trees that had only just recently been illumined were swallowed up in the profound darkness. The column of fire now hurried on its way up the wooded slope of a hill or mountain, until it disappeared just as quickly on the side turned away from us, and thereupon, as was to be seen by the flare striding ahead, soon showed itself afresh on another hill, or, it separated just as suddenly, into a number of smaller tentacles of flame which then, like giant Wills-o'-the-wisp, seemed to dance around the intervening black spaces, that were presumably swamps, bogs, rivulets or some of the larger oases. The separation, however, did not last long. The open tentacles soon closed in, and joined again, when as a single stream of fire it continued anew its destructive course over hill and dale until it finally disappeared behind one of the larger masses of mountains. So far, the thrillingly beautiful scene had been keeping a fair distance away; yet with the rapidity of lightning the right wing of the fire column kept rolling closer and closer in our direction. The strong lights and shadows became more glaring, the black pillars of smoke more sharply defined; and now was to be heard the dull crackle of the giant grasses and 6 to 8 ft. high reeds as they were being split by the heat, the uproar changing every minute into the regular indiscriminate and deafening musketry fire of a battle in full swing. Forming an impassable barrier to the fiery element on the south-

east, the Rupununi again at peace, reflected on its unruffled surface the columns of flame that, like a whirlwind, were rushing on to its banks. We continued watching this wild dash in dumb astonishment long after it had passed until finally it was completely lost to sight.

810. The broad savannah stared black and dreary at us next morning. A black pall was spread over the yellow-green carpet that up to yesterday was so pleasant and full of life, and the partially burnt leafless limbs of the riverside and savannah trees towered gloomily into the heated atmosphere, while huge whirlwinds were everywhere building right up to the skies dark columns of dust and ashes out of which innumerable charred half-burnt leaves and leaf-stalks were slung in extensive spirals. Hundreds of hoarsely-croaking birds of prey circled around the gloomy flats to tear in pieces the mammals and amphibians that had perished in the flames. The black shroud even clothed the cheerless mountains in the distance. It was only the fronds of the beautiful groups of *Mauritia flexuosa* that continued to make a show of their full flush of life, because owing to the height of the trunks they had remained beyond reach of the conflagration. The edges of some of the oases also appeared black, and whirling columns of smoke yet rose up out of many, the fire having probably found lasting nourishment in a fallen tree, while far on the horizon, away out in the infinite distance, the dark pillars, continuing to ascend, showed that it was still pursuing its devastating course.

811. Should the traveller return to the scene of desolation after a fortnight's absence he looks around in surprise and searches everywhere for some mark or sign to make sure that he is not dreaming, whether it is really the same flat before him, or if wizardry is not making sport of him. The pall has disappeared, the sombre shroud of sorrow has changed into the gay green garment of life, of a European May. Never idling nor reposing, Nature has clothed trees, bushes, and savannah in an infinitely fresher and more vivid costume than that which the flames destroyed. Owing to the inconceivable rapidity with which it strides along, the column of fire only destroys the foliage, only the blades of reed and grass, but not the tree, nor the grass-roots. Within a few days the young green germinates, buds, and forces itself out from under its gloomy covering almost as quickly as it was destroyed, and soon blots out the last traces of the devouring element.

812. In the course of the forenoon a number of Macusis from the environs had come to Haiowa, partly, it is true, out of curiosity, and partly to offer us articles for exchange. We soon got on to the best terms with them, although one must be careful to avoid direct contact, because each one leaves his mark like the miller does with his working-day jacket, except that here it is red, because this tribe loves the paint really to excess. The men smear their short cropped hair full with it, in the same way that the most sweet-scented dandy does his with pomade. On top of the forehead there is generally a regular clump of it to which is attached the white down of the hokko-hen. The mother also regularly rubs it into her little children's heads for these are assured just as much against sickness as against the power of evil spirits, who dare not venture near such a Redhead. Just as the Negro, for another reason, is recog-

nised at a distance of several paces by the olfactory nerves, so can the Macusi be distinguished by the strong-smelling resins of *Humirium floribundum* Mart., and *Amyris ambrosiaca* Willd. with which the red paint is mixed. They also permit no hair to grow upon any other portion of the body except the head, every other bit of sprouting "down" being extracted with a couple of mussel shells. Only a few strong-minded ones seem to have overcome their prejudice, for I at least saw an individual here and there who had given his miserable growth of beard a chance. In their own eyes it was an ornament upon which they prided themselves not a little. On the spot whence the eyebrows have been removed, they generally paint a red or black conspicuous line.

813. One will never see women unemployed; their work in the field completed they immediately take up the simple cotton spindle, and spin the finest thread in which one might search in vain for a flaw, and according to its requirements, two or more such threads are rolled together. After the cotton is gathered and the picking and cleaning completed, they always beat it before use for some time with sticks, whereby it becomes looser and is less tightly held together.

814. To be sure, I have hurried somewhat ahead of the times in my experiences, and therefore return to the run of the day that provided us, in addition to a fruitless jaguar chase, with an uncommonly funny intermezzo. The general hilarity that ruled the whole settlement was suddenly interrupted by a woman's cry for help, "Teikusi, Teikusi (Jaguar, jaguar)!" that rang over to us from a house situate on the edge of the forest a considerable distance away from the others. Everybody got in a state of alarm; the men seized their weapons and all of us rushed to the house where the trembling woman informed us that just as she was looking up from her work she had seen a big jaguar watching her from the door, but which turned tail upon her shouting for assistance. Everybody with a weapon now hurried along the track, distinctly recognisable, without however anyone succeeding in finding the animal. Naturally a number of cases in which the jaguar with uncommon boldness had fetched out its favourite dainty, a dog, etc., from within an occupied house, formed for a long while the topic of conversation which, through the medium of Sororeng, was carried on between us and the Indians. However keen the jaguar is in tracking dogs, it nevertheless runs as soon as these take up the chase in company with men, and generally escapes pursuit by climbing a tree. One of the hunters who had followed the jaguar's tracks a bit farther than the others brought me, as a spoil, a howler monkey which completely differed in colour from all the others in that, instead of a brilliant yellow pelt, this was a dark brown; if it is not a new species, it is nevertheless a rather striking variety.

815. While searching in one of his boxes for something, my brother came across a six-chambered revolver that he had forgotten all about, although he had bought it in London with the intention of taking it into the Interior. Without being noticed by anyone he quickly loaded it, and got all the Indians sent for, as the white people wanted to have target practice and they were to decide who was the best shot. As everyone

generally respected my brother as the chief personage, he naturally had to shoot first. The mere appearance of the little "Arakabusa" had already raised the spectators to the tip-top of expectation, which increased every instant more and more as they heard the first, second, third, and fourth shots ring out and saw the balls strike the tree on each occasion, without the weapon being reloaded—at the fifth shot, the place was as if it had been swept clean, everybody having got up and away, with the two chiefs in the lead. This was a case where only wizardry or one of the evil spirits must have had a hand, because an arakabusa that in spite of not being reloaded, did not stop firing, but could give a report and throw a ball, was up to now far beyond the limits of their experience, and far above their conceptions of possibilities. The wonderful weapon certainly remained for a long time the object of their most earnest conversation. Similar astonishment was also aroused when, on shooting our guns over the water they first noticed the ball ricochetting from the surface at a distance of 600 yards.

816. Up to now, nothing had been heard or seen of the military expedition, but as our patients were remarkably improved, and we were abundantly provided with provisions, we said good-bye next morning to dear Haiowa which, with its wonderful view over the broad savannah and over the rapidly advancing column of fire, impressed itself all the more deeply upon my memory when, on my return, I found only abandoned houses. The chieftain and wife and his son died soon after our departure, —the Evil Spirit to whom they must all submit had pitched his camp among the harmless residents.

817. From Haiowa onwards, the Rupununi still always 200 yards wide, keeps on winding towards the north-west. The burnt-off grass, and bare branches of trees and bush on the northern bank showed that the conflagration had also pursued its devastating course here. Having already passed, before reaching Haiowa, the mouth of the Curassawaka where my brother six years ago waited for the rainy season and which flows into the Rupununi from the south, we now on the continuation of our journey, during the course of the morning, struck the mouths of the Watama and Annay Creeks. The latter comes down from the northern hills and joins with the Rupununi immediately in the sharp bend which it forms to the southward; the junction lies in 3° 54′ 30″ lat. N. and 59° 1′ 29″ long. W. Annay village lies at the source of the stream on the eastern foot of the Annay Range. In the Macusi language Annay means maize, which is found growing wild here. The settlement was formerly occupied by Caribs with whom my brother spent six weeks on his first journey with a view to re-establishing the undermined health of his party. For me the village had a still further special interest in that a strange report is connected with it, which we find related in the diary of two Englishmen, Smith and Marine-Lieutenant Gulliver, at present in my brother's possession. Both these gentlemen went up the Waini in 1828, crossed the small tract of land between this and the Cuyuni and following the latter down to its mouth in the Essequibo, then travelled up it to the Rupununi, from which latter they reached the Pirara, Mahu, Takutu, Rio Branco and Rio Negro. On the Barra do

Rio Negro Smith died of dropsy. Lieutenant Gulliver continued his journey on the Rio Negro, travelled down the Amazon and arrived at Para whence he went to Trinidad. In the diary mentioned the travellers note: "On the Rupununi we reached the Carib settlement Annay and were cordially received by the chief who immediately had fish and pepper pot set before us." After they had fairly satisfied their hunger with the dish, another pepper-pot was set before them that contained a large piece of meat and two human hands. At first the travellers believed they were the hands of an ape as yet unknown to them and, as their very resemblance made them shudder, refused it with the excuse that when travelling it was forbidden them to eat the flesh of four-footed animals. While the chief was now gnawing at a hand with evident gratification he asked them what the fish and sauce had tasted like, and upon being told that it was excellent, he assured them that human flesh was certainly best suited for fish-sauce, for which reason he always had the former boiled with it, as had been the case here, he having only recently returned from a punitive expedition against the Macusis of whom he had made several prisoners and was now killing one by one.

818. The horror and fright that overcame both travellers could not be adequately enough described, and yet they had to suppress their feelings. The hope that the chieftain's statements might prove false had nevertheless to be only too soon abandoned when they actually found in the middle of the village a house that was closely surrounded with high palisades in which they noticed several Macusis. Lieutenant Gulliver, who felt sick, lay down in his hammock, but Smith remained awake all night through the continual dread that their host might easily develop a taste for the flesh of a white man. When about to bathe next morning in a pond close by, the Indians tried every method to restrain them, telling them in the meantime that everybody who bathed here would die within a year. Both of them, however, insisted upon their bath and as chance would have it neither survived the expiration of the twelve month. Smith died on the Barra do Rio Negro and Gulliver fulfilled the prophecy soon after his arrival in Trinidad, where he committed suicide for some unknown reason by hanging himself. So much for the diary which, otherwise posted up with a great amount of truth, undoubtedly contains in this particular portion of it nothing else but one of those many narratives of adventure to which one in Germany so aptly applies the name of "fish-story." The Annay Indians well knew plenty of things to tell my brother about these two white men, but nothing concerning the enchanted pond which one sought in vain in the neighbourhood.

819. Not far from the mouth of the Annay a Macusi had built his lonely residence on top of the uncommonly high bank, to which a sort of ladder led from the water edge. As one of our boats was still behind we climbed up to the house, and found two of his wives, instead of the owner, at home—the third had accompanied her husband. It was one of the rare cases of polygamy among the Macusis which we personally became acquainted with. Close to the house a tame young giant-crane (*Mycteria Americana* Linn., the Tararamu of the Macusis) attracted my

undivided attention. It was the first that I and several others of the expedition had ever seen, and we were accordingly not a little astonished when this huge bird came running up to us with a peculiar hissing and piping note very much like that of our young storks. Its immense beak, bent somewhat upwards, surprised us just as much as its naked head and neck only sparsely covered with feather-down.

820. When the boat reached, we continued our journey alongside the blackened bank now robbed of its botanical splendours. Only here and there had the flame spared an isolated crippled *Curatella Americana* Linn. or a *Gomphia cardiosperma* De C. and *G. glaberrima* Beauv. The Indians use the rough hard leaves of the former as we employ shave-grass or pumice-stone, for polishing their weapons, etc.

821. The south-easterly spur of the Pacaraima now ran fairly down to the water-side along the foot of which the river meandered for a while. The banks here consisted of a bright yellow clay, richly mixed with sand and the savannah spread out immediately behind the riverside vegetation which kept on varying repeatedly in width. If the sandbanks in comparison with the Essequibo only appeared always at intervals now, their number exceeded those of that river by far. Some giant cranes, 6ft. high, generally strutted up and down them with arrogant step. This measured walk and erect carriage gave the bird indeed a worthy and imposing appearance. Like our storks they have to take a thrice-repeated run before they rise. Their visit to the sandbanks is partly dependent upon the young turtles* which we now saw hurrying out of the sand down to the water more plentifully than ever. The instinct according to which these reptiles never miss their way to it is truly wonderful; we often carried these small delicate creatures far into the bush, and then turned their heads inland, but in vain—hardly had we withdrawn our hands than the little animal turned itself round and without delay scampered off to the river.

822. The curiously-shaped cuirass-fish (*Loricaria cataphracta* Linn.) was also to be found on the sandbanks and, like the *Callichthys* related to it, seems to leave the water and undertake small trips on land. We often found it two or three feet away from the edge of the water where it lay quiet on the damp sand and fell an easy prey.

823. I am still not yet finished with my account of the inhabitants of, or at least the visitors to, the sandbanks: the biggest of the rodents, the water-hog (*Hydrochaerus Capybara*), frequents them in very large numbers. Although we had already found everywhere upon the Essequibo sandbanks the most abundant traces of this ungainly and clumsy animal, we had never succeeded in meeting with a specimen. The coloured people call them water-haas, a name that probably arises from the Dutch. Like otters, they are good swimmers and yet cleverer divers, and only very seldom betake themselves inland far from the waterside. A pretty little duck, *Anas viduata* Linn., also showed up here together with the *A. moschata*: the former is likewise called Vissisi

---

* Macusis contradict this statement; they maintain that the birds' diet is strictly limited to fish. (Ed.)

by the Indians because its cry is quite like that of the *A. autumnalis,* which however far excels it in brilliancy of plumage. One can easily imagine how busily our guns were kept going at the frightened swarms of the Vissisi as they continued to fly up and down stream and over our heads: *A. moschata* seemed to be smarter, for if once scared they did not return. We used our weapons upon them with most successful results, often bringing down at one shot from 6 to 8 on the wing: their flesh is undoubtedly one of the greatest delicacies.

824. The farther we went the more numerous were the sandbanks and the drier the river until we finally had to punt the boats forward with poles. A number of black porous crags appeared on the river bank itself, or in beds on top of clay, while in those situations where the savannah reached direct down to the water, the steep banks generally consisted of sandy concretions, to which the name Cascalho-Conglomerate* has been applied.

825. Among the various new plants several species of the beautiful *Gustavia* were especially conspicuous, particularly *G. fastuosa* Willd. and *G. urceolata* Poit. which with their large lovely white flowers shone sweetly out of the dark green. *Psidium aquaticum* and *aromaticum* as well as the lowly trees of a *Desmanthus* commonly occupied the sandbanks. A show was made on the branches of the latter by a beautiful *Loranthus* with brilliant red blossoms over an inch long, in which I recognised a new species that Dr. Klotzsch has called *Loranthus guianensis*; just as plentiful upon them was *Loranthus Smithii* Schomb. I have not found either of these species on any other tree. If the foster-father blooms at the same time as the son, the sight has something infinitely charming about it because then the white flowers of the *Desmanthus* mix in the loveliest manner with the red ones of the *Loranthus*.

826. The inlets or kirahaghs are to be found continually along the banks: amongst them that of Assicure deserves mention on account of its size. (These bays appear to be the resort of the *Sudis gigas* for we everywhere recognised their reddish-brown and black tinged tail and dorsal fins in between the malicious heads of the kaimans exposed on the surface of the water. The Sawako-tunalli or Rain Mountain, with which many a superstitious belief is connected, and along the base of which we passed, is the highest summit of a mountain group that forces the river to turn sharply to the south. The mountains were almost generally bare, and only here and there were occupied by isolated stretches of forest: on the other hand, some devilish Power seemed to have regularly overstrewn them with huge granite boulders.

827. The whole horizon was again to-night reddened with the glare of a burning savannah. In the course of the afternoon wherever the savannah touched the waterside we had already seen immense columns of smoke rolling along. During the night the stream

---

* Cascalho-conglomerate. This is probably the secondary conglomerate formed by the re-cementing of the detrital products of the Kaieteurian conglomerate of which the Pacaraima Mountains are formed. (E.E.W.)

of fire had reached the bank, the noise of crackling grasses waking us from our sleep. We gazed calmly from out of our hammocks at the unloosened element—but then, there was an invincible enemy of the flames, the river, between us.

828. The river maintained next day its winding course to the Southward. After getting into the Rupununi the rapids and cataracts had indeed disappeared, but other difficulties opposed us in their stead. The mighty giants of the forest, which the floods during the rainy season had overturned and torn away with them in the upper reaches of the river, had stuck fast in these bends and upon the sandbanks, and in many places the uprooted trees were stacked one on top of the other so thickly that it seemed as if one of those tropical tornadoes had raged along the banks and thrown down everything in front of it. The stout branches, bereft of leaves, rose everywhere out of the water like mighty warnings of danger and formed at other points again regular abatis through the narrow openings of which the otherwise quiet ripples rolling towards them foamed like angered torrents. Though in such spots one has to fight one's way forwards, axe in hand, with every stroke of the paddles, the visible obstacles are nevertheless far from being so dangerous as those hidden and more isolated branches under water, because every careless bang against one of the latter, particularly when travelling down-stream, inevitably entails a leak, but often also the upset of the corial. To the tiresomeness of the present voyage was now added the doubly increased plague of sandflies which swarmed to a really awful degree. At sundown the tormentors disappeared as if by magic but at earliest sunrise they returned with never-satisfied greed for blood.

829. In the course of the day we met a large corial with Macusis who wanted to take a trip down the river. We also heard from them that the Brazilians still retained possession of Pirara and that the whole of the Indians had left the village for which reason the Brazilian Domini, as almost all the tribes call a missionary, had withdrawn to his previous station, Fort Sao Joaquim on the Rio Branco, where the commandant of Pirara, Captain Leal, was also at present stopping.

830. Mount Apayabo-Optayo (Unnatural mother), the base of which was watered by the stream, might be about 1,500 feet above river level. The Macusis accompanying us from Haiowa told us many a remarkable thing about the two great cavities that are to be found on its Northern slope. For some time past the Rupununi had considerably narrowed its bed; here it had barely a breadth of 40 yards, and on the farther side of the streams Massuro and Bononi one of but 13 yards, whereupon it soon after resumed its previous width.

831. The vegetation along the banks now became more luxuriant, the majestic *Mora* was not even wanting among the foliage trees, and the large beautiful violet flowers of the *Cattleya superba* Schomb. upon its branches, like the white and yellow blossoms of the *Inga* and *Cassia* bushes on the banks, the sweet-scented flowers of the *Machaerium Schomburgkii* Benth., and the *Gustavia pterocarpa* Poit, overtopped by

the glorious *Petrea macrostachya* Benth., lent them a peculiar and lovely charm.

832. Among our coloured boathands from the Essequibo was a mute—a passionate fisherman. No sooner had we pitched camp to-day upon a large sandbank than, as was his daily custom, he took up his line and made his way in one of the boats to a small sandbank lying off the opposite shore. Everybody was already soundly asleep when they were suddenly awakened by a really extraordinary but at the same time terribly startling sound, which at first no one really knew what to make head or tail of, until one of the people shouted, "It must be the dumb man!" Armed with cutlasses and guns we immediately jumped into the boat to render him assistance, for the trembling tones only too distinctly betrayed that it was required. On landing where he was, we noticed, so far as the darkness in the distance allowed, that the poor angler was being dragged here and there, though always in the direction of the water, by some invisible power, which he was striving to resist with all his might, and uttering those horrible inarticulate sounds all the while. We soon stood beside him but could not see what it was that jerked and pulled him to and fro till we at last noticed that he had wound his fishing-line five or six times round his wrist and that some huge creature must be dragging on the hook. This turned out to be an immense *Sudis gigas* which, after yielding to temptation and swallowing the bait, had pulled upon the line so forcibly that the poor fellow's strength had been too weak to unwind the line or to haul in the brute. A few minutes later and the exhausted fisher would have been unable to resist the creature's strength any longer. Amidst lots of laughter everybody now grabbed at the line and the monster soon lay on the sandbank: it weighed over 200 pounds. Our mute, into whose wrist the line had cut, now endeavoured by means of the most ridiculous gesticulations to explain how the thing happened as well as his deep anxiety and distress. Prior to the unfortunate accident he had already caught a number of *Phractocephalus bicolor* from three to four feet long and from 30 to 40 pounds in weight—the largest that I had hitherto seen. Although it was late in the night the catch was nevertheless cut up after our return to camp where many a still smouldering fire burst afresh into flame, and many a pot was filled and its contents devoured. I prepared the monster's head for the Anatomical Museum. During the course of this late supper Sororeng told us of a similar adventure that had happened to him on my brother's previous journey above one of the falls of the Barima. It chanced that he also was fishing there late one evening in a small corial and had hardly thrown out the hook than it was seized by a powerful Lau-lau which, as I have already remarked, reach a length of from ten to twelve feet and a weight of 200 pounds. Sororeng had tied the line on to the craft, but it got entangled through the fish moving about in all directions, and having nothing with which to cut it away quickly, he at last had to exert every effort to control his boat. The strength of the fish, together with the current, were far too much for him: the corial was getting closer and closer to the top of the fall, when his loud cries for assistance likewise awakened the sleeping rescuers who also reached him

before a fatality occurred, although he implored them, in spite of the danger, not to cut the line, but to help him in some other way. Cooking was continued the whole night through, for the knowledge of having fish in camp that would certainly be spoilt by the morning did not allow any of the Indians or negroes to think about sleep.

833. On the right bank next morning we reached the narrow mouth of the Simoni, the bed of which immediately behind its entrance into the Rupununi spreads out like a pond. The sides are low and apparently more fertile than those of its main stream. On the farther side of the mouth a whole series of from 12 to 15 foot high isolated porous blocks of rock which the Indians called Kirinambo attracted my attention. They stretch from the bank towards North East North and in their outward appearance they look uncommonly like a row of people. "A long long while ago," the Macusis told us "the Caribs came as far as here with hostile intent to surprise the Macusis and exterminate them from off the face of the earth. At that time the Good Spirit still lived among our forefathers; he felt sorry for his wards and turned the Caribs into these stones."

834. We now got close to Wai-ipukari Inlet, the landing place for Pirara, although the village itself was situate another 11 miles inland. As we could not attach implicit belief to the statements of the Indians that some Brazilians were still there, all precautionary measures were taken to guard against a surprise as well as to avoid anything that could make the military stationed there cognisant of our proximity. Each of the boatmen received a certain number of ball-cartridges; similar loading was prepared for the small mortars, and no one from now on was to dare fire a weapon. But with these warlike preparations the jaws of our escort dropped: their hearts were in their mouths. While the Indians, particularly the Macusis, who for the greatest part had already been so often witness of the ghastly scenes practised during the slave-raids carried on by the Brazilians, received the weapons out of the supply of "trade"with flashing eyes and the distinctly expressed wish—"if I could only satisfy through your means my revenge for all the burnt-down settlements, all my murdered relatives and tribesmen"—these precautionary measures brought into existence exactly the opposite sentiments in the Negroes, coloured people, and unfortunately also in our four South-Germans who had no inkling that on this expedition such perilous incidents could possibly take place. Hamlet and Stöckle again surpassed everybody else. We strove in vain to force a weapon on the former; he swore black and blue that he now and never would use it, for by doing so he would only make his unhappy lot worse. Although the three remaining Germans possessed at least sufficient sense of honour as not to give expression to their anxiety in such a cowardly whimper, their long faces and trembling hands nevertheless betrayed it quite enough—signs that the Indians noticed with contemptuous looks. I must admit that I was ashamed of my landsmen. Man's mind is indeed a mystery; the very same people who had been hourly exposed to the greatest peril and who had trusted themselves to the broad expanse of uncertain Ocean, people whose lives had so often hung on the slightest

thread, and who had persisted in accompanying us on our journey to the interior,—these very individuals now trembled and quaked like children at a danger which in comparison with man's courage ceased to be such, and made themselves the laughing-stock and gibe of others to whom they believed themselves infinitely superior. We hardly could have pulled a few hundred strokes in the deep silence when the Indians commenced chaffing: all of a sudden the short and half suppressed shout "Matti, Caraiba!" (almost all the tribes of the interior call the Brazilians Caraiba) was heard, and the whole of the black, white, and brownish crew crumpled with fright like aspen leaves, and strained their eyes in the waterside bush, until the suppressed laughter of the Indians let them see that their anxiety and misery were only being made sport of.

835. It was quite easy to foretell what would happen if a surprise-attack were really to take place. Under such circumstances what would have been the use of the large number of poltroons who already winced at every sound of a frightened mammal or rising bird on the densely foliaged bank and took it for a Brazilian in the act of training his gun on them? The numerous clouds of smoke rising ahead and at our side in the distant savannah, and my brother's carelessly uttered remark that the Brazilians had probably set it ablaze added fuel to the fright of our faint-hearted heroes.

836. That ominous spot Wai-ipukari Inlet upon which, according to the imagination of the valiant crew, life and liberty depended, showed up at last. Every tree, every bush was examined and scanned in mortal terror, lest perhaps the dreaded enemy was under cover: he was nowhere to be seen or heard. We landed on the right bank where we pitched our temporary camp as we wanted to remain a few days and at the same time forward the Governor's despatches to the commandant of Pirara.

837. Wai-ipukari Inlet, in 3° 38′ lat. N., and 59° 11′ long. W. is the "Port of the imperial and golden city of Manoa": a path leads from there to the Macusi village of Pirara on the bank of the Amucu, the "large lake with golden edges," the terminus of our present river-trip. With our big heavily-freighted boats we had now successfully completed a dangerous passage of more than 300 miles against stream over a number of raging rapids and other obstacles: we had spent more than six weeks squeezed up in the narrow confines of the corials and, in addition to the continuous exertion, we had had to bear the rack and torture of the sandflies ever since we reached the mouth of the Rupununi. The inlet was accordingly hailed by us with delight, but less so by the crowd of heroes who were still ever fearful of their life and liberty.

838. Pirara was yet 11 miles inland and Mr. Fryer, who very readily undertook the order, was commissioned to deliver the despatches: the more the two Germans and coloured people who were to accompany him kicked against the pricks, the less it helped them. He left camp next morning with his heroes who took farewell of their friends in a last good-bye; their return could not be expected under two days. After this party had got out of sight, another was sent off to the Awaricuru River to clean it of its overhanging branches and trees: it opens into the Rupununi upon the left bank a few miles above Wai-ipukari Inlet and

during the rainy season forms, in conjunction with the Quatata, a fine water-way pretty well as far as Pirara: the streams are divided from one another only by a small stretch of land. With the exception of this inconsiderable portage continuous communication by water is offered from Demerara to Para, on the Amazons, through the agency of the Pirara, Mahu, Takutu, Rio Branco and Rio Negro. As the rainy season was now in front of us we could at least get within a few miles of Pirara on the Awaricuru, which was of importance to us in connection with the heavy land-transport.

839. A short trip in the neighbourhood of the Rupununi banks afforded me the opportunity for making, at almost every step, some new discovery in the field of botany. On getting through the forest-border of the Northern waterside I stepped upon the open undulating savannah. Though its vegetation, compared with that of the river banks, is called stunted, it nevertheless contains a number of treasures that the latter wanted. At the very first move I made, a peculiar plant of the family *Eriocauloneae* which, as I subsequently noticed, spread itself over the whole of the hilly savannah, particularly over the tops of these wavy rises, struck me as being a *Paepalanthus*: on closer investigation it turned out to be a new species which Dr. Klotzsch called *Paepalanthus capillaceus*.* The hills were strewn throughout with glossy ochre-coloured pebbles and other stone which had probably derived their colour from the reddish and ferruginous solid clay of which the soil consisted The lovely flowers of *Machaerium Schomburgkii* Benth., resembling the violet in scent, perfumed the whole atmosphere in the neighbourhood of the bight, around which the dainty tree is so plentifully found: its hard timber is undoubtedly one of the most beautiful of ornamental woods, its many brown spots giving it quite the appearance of a jaguar skin. The Indians call it Itikiri buriballi and frequently bring it to Georgetown for barter.

840. A hunting expedition was arranged for the following morning. Supplied with something to eat I went off into the forest limiting the Southern bank in company with two of our Waikas and Warraus, to whom the lay of the land was certainly just as little known as to myself.

841. My companions sneaked so lightly and nimbly through the thick bush that I had all I could do to follow them. They distinctly heard every sound of an animal that was inaudible to me, they swept their eyes in all directions and up the summits of the tallest trees until they assured themselves of their quarry and then imitated its call now at first lightly and then continually louder and louder: not a single thing from the smallest to the biggest escaped their eyes, ever alert ears, or

---

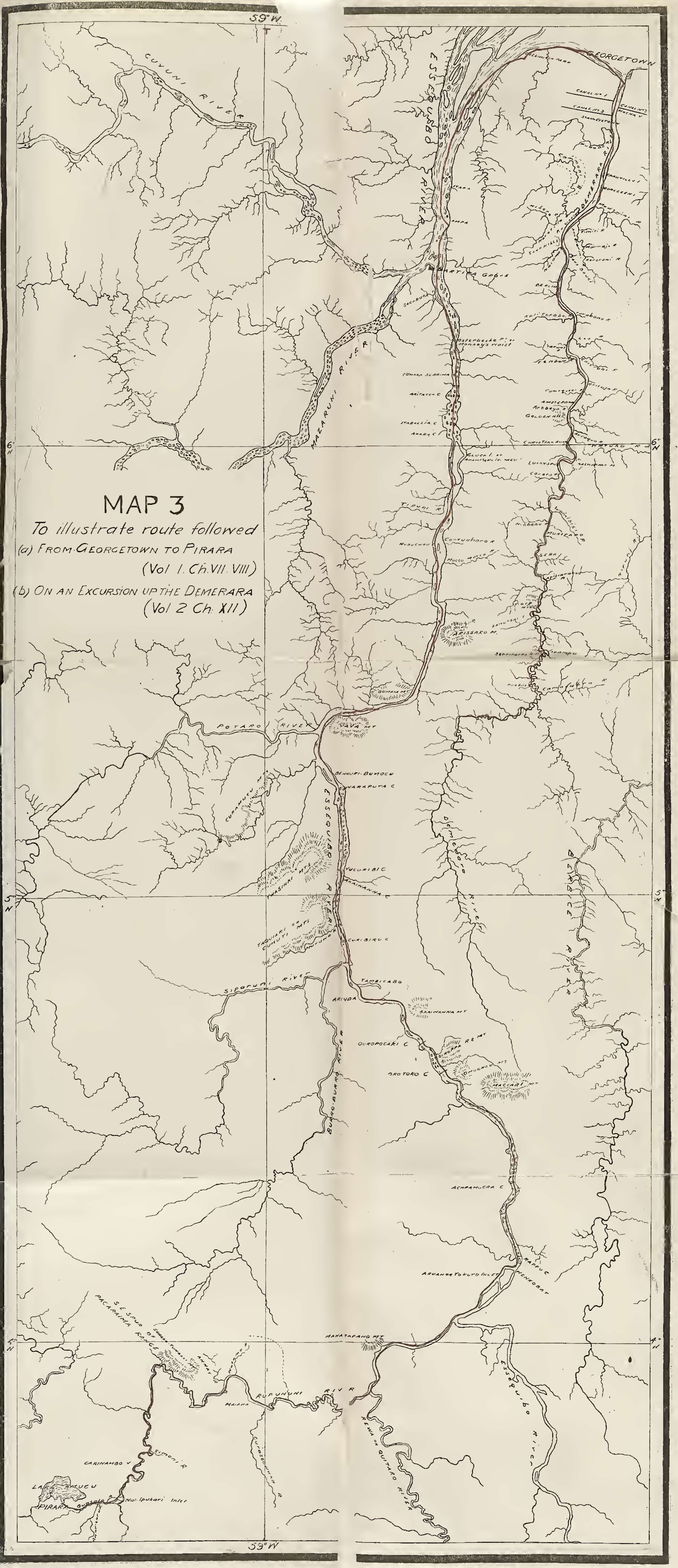
* —Besides the stunted and isolated *Curatella americana* Linn. trees, the following plants predominated: *Hirtella rubra* Benth., *Tibouchina aspera* Aub., *Bauhinia macrostachya* Benth., *Plumieria mollis* Humb. Bonp.. *P. bicolor* Ruiz. et Pav., *Helicteres althaeifolia* Lam., *Byrsonima crassifolia* Humb. Bonp., *B. Moureila* Loud., *B. verbascifolia* DeC., *Amasonia erecta* Linn. with their glorious bracts, *Phaseolus linearis* Humb. Bonp., *Crotalaria stipularia* Desv., *Commianthus Schomburgkii* Benth., *Lippia microphylla* Chmss., *Camara tilixfolia* Benth., and *Aeschynomene mucronulata* Benth. The real grass-covering consisted for the most part of *Cyperaceae*; in fact, the genera *Isolepsis*. *Carex*, *Hemicarpha*, *Dichromena*, and several species of *Cyperus* had their home on the dry higher-lying savannahs, while *Mariscus*, *Kyllingia*, and *Scleria* occupied the damp and marshy spots. *Hypolytrum* was also represented

quick hands, while at the same time they now and again kept turning down a twig, signs to help find their way back out of the labyrinth. If the animal answers the call but once, it is the sure prey of the hunter who, like a snake in the grass, creeps closer and closer without hardly shifting the leaf lying on the ground until the bird or quadruped is within reach of his weapon. A curious thing about Indians who own a gun is the firmly-rooted and obstinate opinion that the more the powder the more true the aim. In spite of all our demonstrations against the fallacy we never convinced them to the contrary. The report is naturally more noisy and later on I would have betted anything that out of a hundred shots I could tell exactly how many were loaded by Indians. It is unnecessary to mention that what with the bad weapons they generally possess a number of accidents result from this senseless idea, and that were they not to sneak so closely on to their game, or to decoy it into their immediate vicinity, the Indians would soon enough discard these fire-arms and resume their bows and arrows.

842. We might have been working our way for about half an hour through the forest when suddenly my immediate companion stood stock still, pointed to the ground, and uttered the word "Maipuri!" (*Tapir Americanus*). A given signal put the three others, who were somewhat distant, in touch with the information, and they also cheerily called "Maipuri!" Quietly and without a sound we proceeded through swamp and bush and thick overhanging cutting-grass. The naked Indians slipped through this knife-edged grass (*Scleria flagellum* Sw.) with such nimbleness and dexterity that their bodies did not show the slightest trace of damage, while as for me, who had only followed the path already broken, the blood was pouring down my face and hands. They never lost sight of the tracks whether these were left clearly impressed on the swampy soil, or led over wide stretches covered with dead leaves: silent and sure we pushed ahead. We might have been running them for a little longer than an hour when they again led into a swamp. The Indians in advance signalled that the animal was quite close. Although I myself now sneaked forward as warily as I possibly could, I nevertheless made just as much noise with one of my feet as the Indians with all their eight, which made them turn round upon me every instant with angered countenances. The first Indian now crouched low, with the animal in the swamp ahead; we soon caught up to him, did the same thing, and I saw a tapir for the first time. After the manner of our pigs it had thrown itself lengthways in the wet spongy soil where it seemed to be feeling quite comfortable until, at the end of a few minutes, it must have noted our presence, when, sticking its head up and sniffing the air with its short snout, it got on its legs—the moment when all five of us fired as if by word of command. Wounded, but not mortally, it made an awful spring, circled round a few times and before we could reload, rushed into the thick bush, with us behind it, until we suddenly heard a dull splash in a piece of water ahead of us, and to our disgust found ourselves on the high steep bank of the Rupununi up the opposite shore of which the tapir was just then clambering to make its way into the brushwood. An instant later, I stood all alone on the edge and saw the

four Indians swimming the river below me, holding up their weapons and small hunting pouches containing powder and lead, out of the water, and disappearing in the bush on the farther side. In consequence of the high jump into the stream not only their weapons but also the ammunition of course must have got wet, on which account I did not expect any results from their pursuit. And there was I standing all alone by myself upon the high bank in ignorance of my position, whether above or below our camp. I waited in vain hour after hour for the return of my companions, called, shouted, and whistled again, but nothing else was to be heard beyond perhaps the note of some frightened bird or animal making its escape. What happened to me on the first occasion of my being lost was now vividly called to mind. I also cursed myself for neglecting to bring a compass. I also cursed my crass stupidity—it was no good, it did not advise me which direction to take. I had thus been sitting several hours already and had long given up hope that the Indians would make their way back, when I saw the bush opening on the farther shore and one Indian after another coming into view, throwing himself into the river and swimming over to me. Their efforts had been fruitless and although they had found the animal again and had got within shot, the guns, as I had foreseen, had all missed fire. All of us had loaded with coarse shot, and so none of the hits were mortal. The tapir made its escape. My companions returned vexed and depressed and although, in their opinion, I was the main cause of their failure, I nevertheless had often to laugh heartily enough when, on the way back, they mimicked the actions of the shot animal in pantomime. We reached the camp by sundown where the whole conversation, that lasted far into the night, now turned upon the tapir. They related the story of their bad luck to almost everybody and in the course of their narrative did not omit to mention even the most trivial circumstances. They told how they had found and followed the tracks, how the animal had been wounded, and had jumped into the river, and how they had pursued it but had come back empty-handed. I understood everything, accompanied as it was by the most vivid pantomime, as the others listened and now and again interrupted the flow of speech with their "Wa" and "Na." The oft-repeated word "Paranaghieri" betrayed distinctly enough that I was also referred to here as the main cause for their bad luck.

843. The great question of the morrow was, as only to be expected, the return of Mr. Fryer. Everyone was awaiting the valiant band of warriors with the greatest tension and the liveliest curiosity, but nevertheless with the conviction that it would never more be seen, because they imagined the poor fellows were already bound in chains on their way to Fort Sao Joaquim. They were accordingly not a little surprised at the party's return in the course of the afternoon safe and sound, and its absolute confirmation of what the Indians had stated. With the exception of four families Pirara had been abandoned by all its Indian residents; the Brazilian military garrison had also withdrawn leaving but three men behind. These three, however, were not to be found in the village, having strolled off to a neighbouring drinking-party. The



MAP 3
To illustrate route followed
(a) FROM GEORGETOWN TO PIRARA
(Vol I. Ch. VII. VIII)
(b) ON AN EXCURSION UP THE DEMERARA
(Vol 2 Ch. XII)

59° W.
6° N
5° N
4° N
GEORGETOWN
CANAL No 1
CANAL No 2
CANAL No 3
MOCHA V
STANLEYTOWN
GREENWICH PARK
CUYUNI RIVER
ESSEQUIBO RIVER
MAZARUNI RIVER
DEMERARA R
ITAKA
AMPA
KARTIKA GROVE
SACARURA
Osterbecke Pt or Monkey's Hoist
CUMAKA SERRIMA
ARITACCA C
ITABALLIA C
ARARA C
GLUCK I. or ARAMITYRO IK NEW
TIPUNI R
NUBUCURU
Coutuaharo R
Mocco Mocco R
ARISSARO M.
KAIKUTSHI C
OUMAIA MT
YAYA MT
POTARO RIVER
CURAMUCU MTS
TWASINKI MTS
TAQUIARI OR CUMUTI MTS
ANFUNO R
BENHURI BUMOCU
WARAPUTA C
YUCURIBI C
AKAIWANNA C
CURIBIRU C
SIPARUNI RIVER
TAMBICABO
ARINDA
AKAIWANNA MT
OUROPOCARI C
SIROPPA R & MT
OROTOKO C
OMUCHOU MT
MACCARI MT
BURRO-BURRO RIVER
DEMERARA RIVER
BERBICE RIVER
ACHRAMUCRA C
RAPPU C
ARUAN OR TOKUTU INLET
WENKOBAT
MAKARAPANG MT
S E SPUR OF PACARAIMA RANGE
ANNAY
RUPUNUNI RIVER
MAIANA
REWA OR QUITARO RIVER
ESSEQUIBO RIVER
SIMONI R
CARINAMBO V
LAKE AMUCU
PIRARA
Quatata
Wai-Ipukari Inlet
HUBOOBO R
CAMOUNI R
CHANTILLY
DORCEENI
Madewini R
Haiero R
SAND HILLS
Timiti R
Moriniaji R
Kororoni R
BERLIN
Kuli Serobo R
Surabono R
Loo R
Yaruni R
Tenbow
Kaiscruni R
Comaquere R
Orituja R
AMSTERDAM
Arobeya R
GOLDEN HILL
Arraquoa R
CHRISTIANBURG
WOTUKO R
LUCKYSPOT
RASHANAMA M
Coreteia R
Woinibisi R
Nibbebo R
MURIYARO R
SEBA
Arisiarabbo R
Tipuni R
Serriberra
Arampu
Camafubra R

V. ROTH, del.

first thing Mr. Fryer had to do was to bring them back, and then straightway start one of them off on horseback to Fort Sao Joaquim on the Rio Branco with the despatches for the Commandant.

844. All preparations were now made so as to leave for Pirara next morning, the people who had been sent to the Awaricuru also having returned already with the news that they had cleared the river as much as they possibly could. Together with this information they had brought in a *Sudis gigas,* the largest that I had hitherto seen. I was kept busy all night preparing it for the Museum and got it finished by the time we left.

845. From hearing the sound of plenty of gun-fire that was borne over to us by the strong easterly breeze as we were taking our departure, we knew that the military expedition was at hand, a fact that put fresh courage into those who were despondent. Hamlet and Stöckle again breathed freely; the former behaved like a child and the latter found his peculiar unaffected simplicity which for the past three days had been entirely lacking. We left Sororeng to show the new-comers the way via the Awaricuru, and hurried ahead of those marching behind.

846. The banks of the river, which the maps wrongly specify as Tawarikua, were bordered mainly with *Heliconiae, Bromeliae, Rapateae,* and now and again sharp-leaved arboreal grasses behind which rose trees to a height of 160 feet forming with their leaves majestically arched roofs. The dainty *Ibis nudifrons* Spix., continually flying ahead of us kept our company at short intervals and a huge coiled-up 12-ft. long snake (*Boa murina*) fell a target to our guns. The land ever continued to get more swampy and the river soon widened out into a lake-like enlargement at least two miles wide. Wherever the eye turned, whether on the banks or on the water, it struck upon the horrible heads and repulsive figures of kaimans, amongst which we noticed many that measured quite 18 to 20 feet. A number of *Plotus, Carbo, Anas, Ardea,* and other water-birds circled about its tranquil surface, strutted up and down along its edges or else with retracted neck perched indolently upon its trees. Still more numerous, however, must be its scaly denizens. The trunks and branches of the dark riverside vegetation were embellished with inconceivably numerous blossoms of the *Cattleya superba* Schomb. with which, here and there, the *Schomburgkia crispa,* and a quantity of *Epidendrum, Aspasia, Bifrenaria,* and *Catasetum* were intimately associated. The leafless trees killed by the wet, for instance, were regularly overgrown with this most beautiful of all the orchids, and covered with hundreds of its large flowers. I have never again found the *Cattleya* in so great a quantity on so small an area as this which they had transformed into a fairy garden guarded by the most repulsive ogres.

CHAPTER VIII.

Arrival of the Military Expedition—Our departure for Pirara—Savannah flora—Ant-hills—Canuku Range—Pacaraima Range—Pirara—Source of the river Pirara—Aberisto, the Brazilian—Mar de aguas blancas—Lake Amucu—Islas Ipomuccna—Watershed of the Rupununi and Rio Branco—Flora and fauna of the neighbourhood of Pirara—Herds of wild cattle—Arrival of Friar José dos Santos Innocentes and of Captain Leal—Señora Liberadiña—Baducca—Catching and killing wild cattle—Brazilian vaqueiros—Arrival of a party of Maiongkong Indians from the Orinoco—Re-erection of dilapidated houses at Pirara—Construction of Fort New Guinea.

847. After we had crossed the lake-like enlargement of the River Awaricuru and the stream had resumed its previous width, the low state of the water forced us to find a place where we could land our belongings. We had got four miles nearer Pirara. A suitable spot was quickly cleared so as to make room for the large amount of luggage, which we could hardly have conveyed to Pirara under eight days had we not had so much assistance. All of a sudden as if by magic every busy hand stopped still; we heard in the dim distance bugles striking up the beautiful melody of "Rule Britannia" which was carried from tree to tree through the virgin forest and notified the approach of the military detachment. It was a strange and affecting moment for me when the absolutely harmonious sounds of the glorious tune swelled ever more strongly and then died far ahead of us in an expiring echo. In the course of an hour the big boat came into view round a bend of the river: it was chock full of a motley-dressed crowd of black figures whose full-voiced throats broke out into a thundering hurrah. Soon after, a landing was made by the officers with Lieutenants Bingham and Bush in the lead, all cursing and swearing at the uncustomary exertion: they greeted us with a hearty handshake. What must the rapids have been to upset their military bearing, what must the undergrowth of "pimplers" have been like to tear in tatters the tunics adapted for parade! A dirty coloured shirt, ten times dirtier linen, half-torn trousers which had long forgotten their original colour, and a broad straw hat constituted the uniform of the commandant, as well as that of the rank and file. When the officers, who were only distinguished from the latter by their white faces, learnt of the peaceful state of affairs, they seemed to be anything but displeased, while the full-toned "God save the Queen" on the bugles rang triumphantly in thousands of echoes through the forest which otherwise was so noiseless. The detachment had left Georgetown only on the 11th January.

848. The remaining eight boats with provisions had been held back at Haiowa owing to the disquieting news that had been received there, as well as to the serious differences that had arisen with Police-Inspector Crichton and the Post-Holder, McClintock. The former, who had traversed the route twice already, had been sent by the Governor with

the expedition to show them the way: the latter had supervision over the Indians who had been hired as boathands. Mr. Youd, as well as our corial that had been despatched from Waraputa to Ampa to fetch the things left behind, was in the rear-guard. While the black crew were discharging their military stores, tents, etc., we and the officers compared notes concerning our respective adventures over a bottle of wine. They had also crossed the falls without mishap, had found our greetings in the empty champagne bottle and followed our example; they unfortunately lost two Arawaks from dysentery.

849. Hamlet was beside himself, for feeling now quite safe he danced and sang around the big fires which he had got lighted in view of preparing the feast for to-day's welcome, and searched the cases for all the dainties that up to now had been put aside.

850. Shortly before supper Lieut. Bingham had his black army drawn up and gave them an inspiriting harangue. He made known to them the condition of affairs but at the same time also warned them not to imagine perhaps that all danger was past, because it was easily possible for the Brazilians to come back now in doubly increased numbers, to try and drive them out of Pirara or lead them into captivity. He did not want to describe in detail the fate that awaited them were they not to justify the trust that England had reposed in their courage and their valour, but would only remind them of the mines in the province of Minas where the prisoners never lived to enjoy the bright blue sky or breathe the fresh air of heaven again. To put it briefly, he represented the lot to be expected as something so horrible that his black audience, who had hardly got enough travelling kit left to cover their nakedness, became possessed of the real Berserker spirit, and swore hard and fast that they would rather hack themselves to pieces than submit to such slavery: judging from my subsequent experience of the Brazilian militia, such a really furious Negro would easily have got the better of any of her soldiers. Exultant and inspired with the glory of battle the multitude was dispersed. That beautiful Hamlet of ours and that cowardly Stöckle now played the part of Falstaff to real perfection for, mixing up with the black troops, these true swaggerers tried to inflame them still more against the Brazilians behind their backs: this was quite unnecessary with the really doughty soldiers.

851. At supper also, many a sarcastic remark to be sure was let fall and many a satirical toast proposed: for without being a military genius, the impracticability of this monstrously costly and, if matters really came to a crisis, unsuccessful expedition was patent to everybody. Had the Brazilians wanted to remain owners of Pirara they could have easily crushed the small force to death before relief could have been even thought of. The presence at the mouth of the Amazon of a single frigate, of which many were lying idle in Barbados, would have produced the same effect at barely a sixth of the cost.

852. Next morning my brother went over to Pirara to get the neighbouring Indians by whom he was generally as well known as respected, to come and help with the transport of the baggage which had to be carried pick-a-back a distance of seven miles; the soldiers were not going

to do this, they being only bound to carry their weapons and knapsacks. Mr. Fryer was ordered to stay here until the last bit of our luggage was fetched away: Goodall and I on the other hand willingly remained behind to join in some hunting-parties with the officers who had to await the rearguard before they could leave for Pirara. Unfortunately we got back from all these excursions cut and tattooed with the sharp cutting-grass, and no other bag than a number of birds: the whole area consisted of an almost continuous swamp which, though indeed fairly dry at this present time of the year, carried no mammals. Owing to its slender halms this generally 10 to 16 ft. high *Scleria flagellum* cannot hold itself upright, and so comes to establish itself on bush and trunk with which it forms impenetrable thickets. Wounds caused by this blady grass sting uncommonly badly, for which reason our ardour for the chase soon experienced a distinct cooling, when we limited our trips to the open damp savannah.†

853. Upon returning from one of these excursions we found that some of the boats bringing the remaining military stores with Lieutenant Weiburg, the mortally sick army-surgeon, together with Quarter-master Low and Mr. Youd had just arrived: our corial from Ampa came with them. Unfortunately my hermetically closed glass boxes had been left behind in Ampa owing to want of space: I bitterly regretted this, because the best means of transporting the living orchids was now lost to me.

854. During the morning the greater portion of the military left for Pirara, Lieutenant Weiburg staying behind with a detachment in charge of the baggage, an arrangement that suited Mr. Fryer down to the ground. Mr. Goodall, Missionary Youd and I left the camp before the soldiers so that I could count all the easier upon getting something. At first the path lay over undulating ground that was sparsely covered with bushes of *Casearia carpinifolia* Benth., *C. brevipes* Benth., *Melastoma, Hirtella, Byrsonima, Mimosa* and *Cassia,* scattered trees of *Curatella Americana*, as well as with a short grass that the sun had long since coloured yellow. In between the bushes there rose everywhere 8 to 12 ft. high whitish pyramid-like heaps that lent the whole a peculiar character. These were the dwellings of termites which, like pigmy villages, appeared upon all the rises above the general level: they were usually built out of the ochreous savannah clay in a sugar-loaf shape impervious to the rain and sufficiently strong to withstand even a tropical hurricane. Here and there perching upon their tops could be seen one of the pretty little falcons (*Falco sparverius* Linn.) that would shoot down like lightning after an insect or lizard and return with it just as rapidly to its Belle Vue. The female differs essentially from the male in the colour of the plumage. The large Caracara eagle (*Polyborus caracara* Spix.) had also picked these ant-hills for a look-out whence

---

† Besides the orchids and the *Loranthus guianensis* Kl., already cited, I found particularly in the swampy savannah the *Buttneria scabra* Linn., *B. ramosissima* Pohl., *Polygala longicaulis* Humb. Bonp., *P. variabilis* Humb. Bonp., *P. appressa* Benth., *Corchorus argutus* Humb. Bonp., *Coutouoea reflexa* Benth., *Buchnera palustris* Spreng., *Schultesia stenophylla* Mart., *S. brachyptera* Chmss., and *Bacopa aquatica* Aubl.

he would pounce down and waylay the animals, fearing nothing evil, as they were passing by. Not only the ant-hills but the rising ground of the rest of the savannah was everywhere strewn with pieces of quartz, clay, and brown iron-stone gravel: the quartz was coloured reddish-brown with iron oxide, while the clay appeared both in the form of isolated hardened fragments as well as in complete similarly hardened boulders. Near by the ant-hills and larger boulders occupied by those thieves, numbers of ugly blackish lizards (*Ecphymotes torquatus* Dum.) were sunning themselves, but in spite of every effort I never succeeded in catching any of the volatile creatures, because they always disappeared in the grass as quick as lightning as soon as I got within six to eight paces. A small prettily coloured lizard of the genus *Centropyx* or *Cnemidophorus* was also slipping around in and amongst the grass.

855. The otherwise ordinary savannah was soon to be more enlivened as a whole, because we saw several parties of persons ahead moving towards us in true Indian file, *i.e.*, one behind the other in uninterrupted sinuous lines between the ant-hills. As the first party drew near and the leader recognised Mr. Youd, an expression of real delight was depicted on the faithful good-natured faces: everybody pressed round to shake hands and scrutinise him more carefully to make sure that it was indeed their old friend. Youd introduced us to an old one-eyed man, the chieftain Basico,† whose joy expressed itself in every limb; he shook my hands with honest cordiality and inward joy and the expression "Matti!" Naturally they had plenty to tell Youd about what the Caraiba had done, and what they had suffered at their hands. After the first lot had finally taken leave and continued on their way to the Awaricuru to fetch our baggage, the same friendly scene was repeated with each succeeding group, so that from now on we could only make slow progress to Pirara: our pace was also retarded by several swampy spots occupied by large numbers of the *Mauritia flexuosa* which, with their smooth grey trunks and numerously leaved crowns, often strove a hundred feet and more to reach the skies. In the course of our journey we got on the top of a not inconsiderable rise where one of the most beautiful panoramas unexpectedly opened out before us: a landscape over which the eye rambled with delight. Southwards, on our left, the thickly forested Cōnokon or Canuku Range stretched some 30 miles away from North East to West in fanciful wavy lines out of which various huge bleak masses of mountain rose above the dark patches of foliage as they soared away in picturesque rocky ridges towards the heavens: northwards, the cheerless Pacaraima Range also limited the horizon from East to West and in certain spots attained a height of quite 2,000 feet. Canuku means "overgrown with forest" and Pacaraima receives its name from the peculiar shapes of certain rocky heights of the Range that have much resemblance to the Indian baskets which are called Pacara. The Pacaraima Range extends in the said direction from

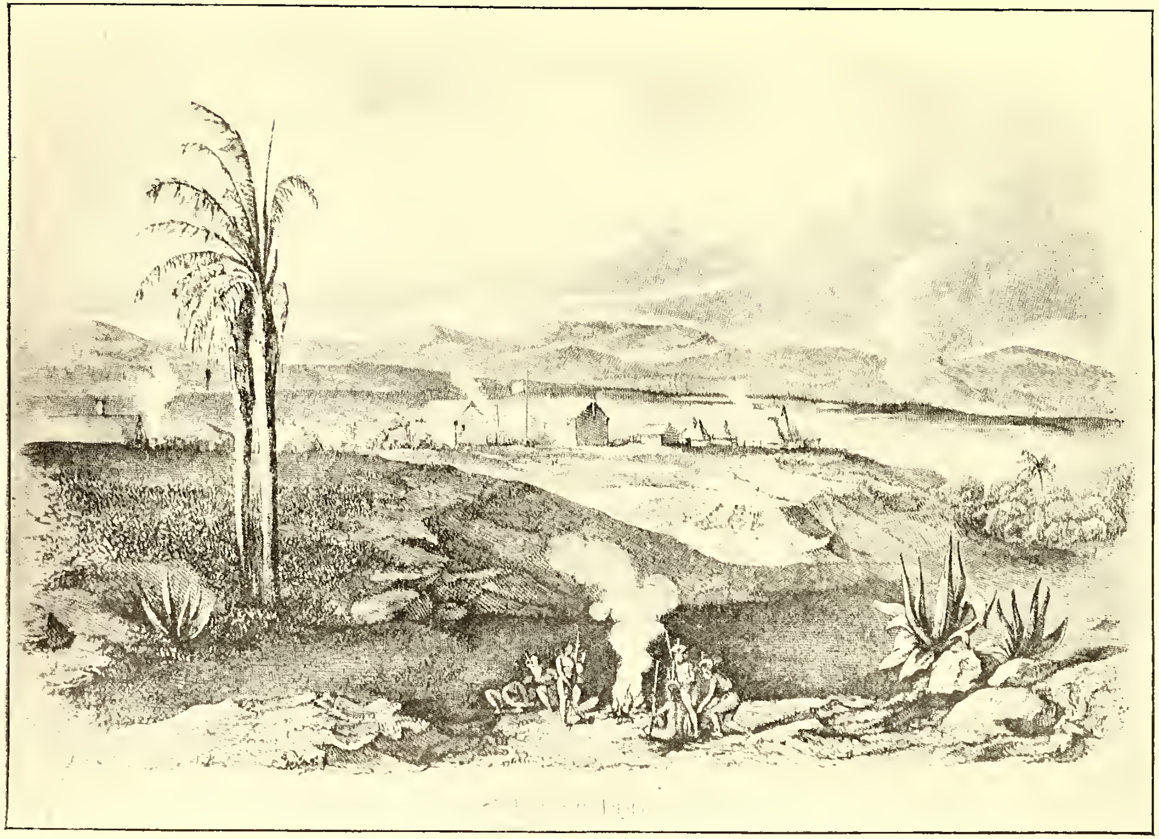
---

† Appun, in the second volume of his Travels, p. 391, makes mention subsequently of one Paschiko, the Macusi chieftain of Tarinang, a very large settlement, not too far from Pirara, between the Pacaraima and Canuku Mountains. (Ed.)

the banks of the Rupununi to the Orinoko, and defines to the westward the separation of the basins of the three largest streams of the northern portion of South America—that of the giant Amazon, the mighty Orinoco, and the cataract-broken Essequibo.

856. The glorious view smiled at us bewitchingly as it lay spread out before us like an immense coverlet over the shallow undulating valley dotted with moist green forest-oases and palm-groups in between the two ranges of mountain, until it finally became merged in the dim distance with the western horizon, when the oppressively hot sunshine on the unprotected savannah combined with a burning thirst forced us to push ahead so as to obtain relief from both at the earliest opportunity. A fresh party of Indians having been asked by Mr. Youd to bring us some water willingly did so and returned soon after with our bottles filled: the liquid to be sure was not only warm but very evil smelling—and yet it invigorated and refreshed us. On following the small winding Indian path and reaching the highest point of ground we recognised in our rear the advancing "thin red line" of Britons, for the soldiers had donned their uniforms to-day, and on our front, though still in the far distance, the village of Pirara with its numerous buildings. Mr. Youd was deeply affected when he now once more saw rising before him his earlier sphere of activity to which he clung with all his bounteous love. The closer we got the more was the brave missionary greeted by well-known objects both in the outskirts as well as even outside the village. But the building that he looked most anxiously for, the little church that he had erected, was not to be found—the Brazilians had razed it to the ground because it had been built by a heretic. On its former site stood a huge structure that overtopped the others like a Colossus, in front of which moreover an immense cross that was already visible in the far distance had been erected. A second equally large building, also unknown to Mr. Youd, rose at a little distance from the first: in fact, he only recognised but one of the larger houses again and that was his former residence which, as we learnt on our arrival, had been occupied by Friar José dos Santos Innocentes.

857. The small narrow valley of the Pirara was all that separated us now from the height beyond, upon which the Macusi settlement was situate. About a mile to the eastward of where we were standing my eyes chanced to hit the marshy source of the Pirara, enclosed as it was by a thick mass of gigantic rushes and crowded groups of all sizes of *Mauritia flexuosa.* A strong fence stretched away below us on our right: within it the numerous cattle were grazing here and there in the savannah. We crossed the Pirara, climbed the gentle slope overgrown with bush, and entered the village. When once inside Mr. Youd indeed hardly recognised the flourishing little settlement of 1838. Of the 40 natty houses that were then ranged alongside one another now only half remained and even of these many were fast going to ruin: the population at that time numbering 600 had now dwindled down to four families, all the remainder having withdrawn to the Canuku Ranges and other settlements as a result of their rough handling by the



PIRARA, A MACUSI VILLAGE.

Brazilians. Since the departure of Friar José dos Santos Innocentes the three Brazilian soldiers had taken possession of Mr. Youd's former residence where everything teemed with filth. Like the folks whom we had met, the few men and women left behind immediately recogniseed their "Domini" with the most striking manifestations of joy, and the news of his return must have been spread rapidly because on that very same day isolated parties came in from the near-lying settlements to bid him welcome, and settle down again under their former shepherd. An hour later the military with bugles sounding were marched into the settlement and drawn up in close formation before the Mission house in front of which a high flag-staff had been erected. The Commandant in a loud voice next proclaimed the Queen of England as rightful owner of Pirara, the soldiers presented arms, and the large Union Jack was hoisted amidst a deafening hurrah. The wind unfolded the glorious colours of the flag, and merrily it flew in the breeze as if it wanted to tell the astonished Indians who did not know what to do—whether to watch the black faces, the brilliant red uniforms, the shining weapons, or the red, white, and blue banner—"Gather round, for however far from home, I will protect those who trust me." Some bottles of wine sealed the wish that Pirara might never again look upon other colours. The two Brazilian soldiers naturally regarded this ceremony like miserable sinners and on that very same afternoon surrendered their rusty ammunition which, for three men, was fairly considerable, amounting as it did to several hundred loaded cartridges. The Missionary still found the whole of his household furniture at his old quarters. The big house that had been built for the late commandant was taken possession of by the soldiers until such time as their fortified barracks were completed: the Governor had given strict orders that the latter were to be erected at a certain distance away from the village so that nothing in the way of immorality or other cause for marital strife might result from any direct intercourse between the soldiery and the residents. With a view also to stopping any trouble beforehand, every soldier had to drink his daily tot of rum in full view of the officer serving it out so as to prevent its being given to the Indians, or used for any other sordid purpose.

858. Within forty-eight hours of our arrival Mr. Youd had left us for a few days to visit his wife's grave at Curua settlement on the Rupununi: it was she who from the very commencement had helped her husband scatter and care the seeds of Christianity and civilisation with such blessed success. Even before the Brazilians had taken possession of Pirara and banished them both, Mr. Youd had already founded a branch mission at Curua above Wai-ipukari Inlet where from Pirara he once a week celebrated divine service and imparted instruction in the neat church that had been erected by the Macusis living on the river there. It was here that he withdrew on his expulsion and where his wife succumbed to the climate. But this branch mission had not been in full swing more than a couple of months before the Brazilians came and drove him from here also, whereupon he founded the Mission at Waraputa.

859. We all knew beforehand that the war was not going to last long, but none of us had imagined that it was not going to break out at all. On this account the dreams of many a soul yearning to achieve great deeds of triumph still remained visionary but as the present business was to get so securely intrenched as to make the surprise-attack by a more numerous military force, which had always to be reckoned on, as difficult as possible, the field of honour at the same time developed alas, into a scene of hard labour. To us people of peace on the contrary this state of affairs was all the more welcome because there was now nothing to obstruct or hinder our aims and objects of which we naturally had been many a time fearful. As soon as Mr. Youd explained to the wondering Indians that the redcoats with the black heads had only come to protect them from the "Caraibas," every one was ready to help transport the ammunition and baggage over from the Awaricuru.

860. My brother was not a little surprised to find in Pirara an old Brazilian acquaintance who now represented himseelf as the assistant and servant of Friar José dos Santos Innocentes. Aberisto had also remained behind at Pirara with the three Brazilians, and now tried his level best to render himself useful. My brother had already made his acquaintance in a strange way during his stay at Annay in 1835 when he learnt not only his story, but also his character. While a number of Indians were visiting him at Annay one day at his house, one of the strangers suddenly picked up a weapon that was at hand and went through the whole infantry exercise with such remarkable precision as to call forth the loudly expressed astonishment of Lieutenant Hanning, who was then accompanying the expedition as volunteer. The Indian thereupon took a bit of paper and with a pencil wrote a Portuguese greeting on it. As my brother spoke Portuguese it soon transpired that the man was a Brazilian soldier who, to escape pursuit on account of the killing of the commandant at Fort Sao Joaquim had fled to the Indians. On account of the severe and tyrannical treatment under which the garrison were labouring they hatched a conspiracy, incited by Aberisto's thirst for revenge, to murder the officer. Aberisto executed the deed while on guard duty at the gate of the Fort by stabbing his man with a dagger from behind just as he was mounting his horse for the usual evening promenade: the remaining conspirators had thereupon rushed forward and killed the already expiring man outright with some cannon-balls that had been heaped close at hand. Aberisto fled and was at first pursued it is true, but by being so cunning escaped all early attempts at capture which were soon abandoned, and lived among the Macusis up to the time of the arrival of Friar José. During this interval he had repeatedly placed obstacles in the way of Mr. Youd's efforts, with the result that when the latter got to Georgetown he obtained the Governor's order for Aberisto's expulsion from the settlement, in spite of his having lived here so long before, if by chance he were found in Pirara after the withdrawal of the Brazilians. Aberisto had not only known how to approach Friar José when he came, but also to render his services indispensable: it was through the latter's mediation that he had been granted pardon and was appointed Mission assistant.

861. Although it took but a few hours to recognise in him a Jack-of-all-trades, who not only played the guitar in a masterly fashion, but was also just as clever at shoemaking, tailoring, carpentering, turning, in fact at everything else, his cringing friendliness and complaisance especially towards the officers, nevertheless shewed up his perverse and unprincipled character: yet, in spite of everything, he knew how to ingratiate himself so effectively with them, that the order for his expulsion was not carried into effect, although there could be no doubt that he had only been left behind as a spy.

862. I still call back to mind with deep pleasure that first morning in Pirara when at break of day I jumped out of my hammock and hastened in front of the village to gaze, undisturbed, on the wide wide savannah. I stood here on soil rich in fable and myth, at my very feet the "Mar de aquas blancas," the "Mar del Dorado," the "golden edged lake," the "city of Manoa glittering with gold," whither the boldest adventurers of Spain, Portugal and England had wandered ever since the 16th century, including the four expeditions undertaken between 1595 and 1617 by the great yet unfortunate Walter Raleigh who knew how to inflame Queen Elizabeth's imagination and ambition to so extreme a degree. Lying ahead of me was Amucu, a small lake the existence of which as an extensive inland sea where the great streams of South America—the Essequibo, Orinoco and Amazon—were said to take their rise, had already been shewn to be pure myth at the beginning of the nineteenth century by the truly prophetic instinct of Alexander von Humboldt: yes, lying before me was the cryptic inland sea that for ages past had been eluding and yet ever alluring Spaniards, Portuguese, Englishmen, and even Germans, and which even up to the most recent times could not be dropped out of the maps. But I looked in vain for the "golden-edged lake," the imperial "city of Manoa glittering with gold." My eyes only remained fixed on the dark rushes and giant grasses that fringed the swampy borders of its surface that now had become so insignificant in the dry season of the year. And yet around me lay a landscape which my soul enjoyed to its very depths: a park of immense extent bounded, on the north by the bleak Pacaraima, on the east by the detached Makarapan Range that was blurred in the dim distance, and on the south by a huge forested oasis that, commencing tolerably close to Pirara, was illimitable towards the west where my vision rambled over a wide and boundless pasture. Here in level flats and there in lovely undulating rises, like the gently swaying waves of a mildly moving sea, the spacious grassy plains stretched away in front of and past me, while forested oases varying from a mile to but insignificant circumference, built up of noble and tall trees, and edged with giant *Cactus* and *Agave*, like islands in an ocean, broke the continuity of the yellowish-green of the pasture. The somewhat uniform tinge of the flats received however a certain additional variation from the small isolated bushes of *Malpighiaceae*, *Apocyneae*, *Leguminosae*, *Compositae*, *Malvaceae* and *Convolvulaceae* in between which families rose 15 to 18 feet high trees of *Curatella*, *Psidium*, *Bowditchia*, as well as occasionally a few venerable palms, including *Astrocaryum Tucuma* Mart. a species that is only present in the open pasture and almost always appears on the

edges of the oases between the *Cactus* and *Agave*. Two of the largest oases that rise out of Lake Amucu are without doubt the Islas Ipomucena of Don Antonio Santos. On the western edge of the lake the river Pirara makes its way out again to hurry on now to the Mahu, Takutu, Rio Branco, Rio Negro, and so through these to the Amazon. Extending somewhat to the East of its source is the watershed between the basins of the Rio Branco and Rupununi: it is an insignificant undulating rise dotted here and there with bleak masses of granite from 10 to 600 feet in height, a characteristic peculiarity that essentially distinguishes these grassy plains from those immense llanos and pampas of the southern portion of South America. To the southward, as a distinctly visible sign of Pirara, some two hundred paces from the village, on the slope of the hill on which it is situate, are to be seen two very old and isolated palms (*Astrocaryum Tucuma*) the fronds of which are all directed to the westward by the prevailing easterly wind: several huge *Agave* and *Cereus hexagonus* and *pentagonus* Haw. have grouped themselves around their immense trunks for which they constitute an impenetrable protecting wall. Pirara itself lies in 3° 39′ 20″ lat. N. and 59° 20′ long. W. The savannahs between the Rupununi and Rio Branco are between 350 to 400 ft. above the level of the sea.

863. My first botanical excursion in the environs of Pirara was so bounteously rewarded that when I began I did not know where first to turn my eyes or my hands.†

864. I found the animal world on these free open flats just as new to me as most of the vegetable representatives. Although one no longer heard that crude and awful howling of the monkeys, those ear-splitting screeches of innumerable parrots and social falcons (*Falco nudicollis*) and only occasionally noticed in the isolated *Curatella* trees some pepper-eaters (*Rhamphastos Toco* Linn.) but more often the red-headed fly-catchers (*Muscicapa coronata* Linn.) as well as the equally pretty *Muscicapa Tyrannus* Linn. with its two long tail-feathers of which the females' are considerably the shorter—the most beautiful humming-birds such as *Trochilus moschitus* and *flavifrons*, even though silent, were present in proportionately greater numbers: in conjunction with the most brilliant butterflies, they swarmed among the flower bushes. Small falcons perched on top of the ant-hills lie in wait during the mid-day hour for their prey to come and visit the isolated trees while the large Caracara eagles (*Polyborus Caracara*) fly along the Indian pads,

---

†—I am mentioning only a few of the representatives: *Polygala Mollis*, *P. angustifolia* Humb. Bonp., *P. galioides* Poir., *P. camporum* Benth., *Amasonica erecta* Linn., *Neurocarpum longifolium* Mart., *Pavonia speciosa* Humb. Bonp., *Elephantopus angustifolius* Sw., *Unxia camphorata* Linn., *Scoparia dulcis* Linn., *Wulfia platyglossa* DeC., *Coutoubea ramosa* Aubl., *Schübleria coarctata* Benth., *Bidens bipinnata* Linn., *Escobedia scabrifolia* Ruiz et Pav., *Stemodia foliosa* Benth., *Turnera apifera* Mart., *T. parviflora* Benth., *T. aurantiaca* Benth., *T. guianensis* Benth., *Bursonima verbascifolia* Humb. Bonp., *Phaseolus linearis* Humb. Bonp., *Buchnera lavandulacea* Chamss., a number of lovely bushes of *Helicteres guazumaefolia* Humb. Bonp., *Sterculia Ivira* Sw., covered with *Echites coriacea* Benth., then *Cassia lotoides*, *cultrifolia*, and *prostrata* Humb. Bonp., *Miconia ciliata* DeC., *M. Schomburgkii* Benth., *Tibouchina aspera* Aubl., *Securidaca latifolia* Benth., *S. pubiflora* Benth., and *Hirtella rubra* Benth. In the forest oases in the neighbourhood of Pirara I found a *Passiflora* that grows into a real bush of which the twig-terminals inclined somewhat to tendrils: the lovely delicate white petals and brown nectary contrasted charmingly with the bright yellow calyx and the dark green leaves: it turned out to be a new species, *Passiflora* (*Astrophea*) *glaberrima* Klotzsch.

and the *Falco cachinnans* Linn. spies down from its tree top upon every lizard and snake. Pretty little pigeons (*Columba passerina* Linn. and *C. talpacoti* Tem.) and *Sturnella Ludoviciana* Bonap. search busily among the grasses for their food, while the cooing of a large species (*Columba rufina* Tem.) sounds from out of the forested oasis. The carrion-crow (*Cathartes aura*) circles silently around in the air, innumerable *Mycteria Americana* Linn. in conjunction with *Ardea leuce* Ill., strut proudly about the swamps, the remnants of which are covered by all kinds of duck, while coveys of pretty little partridges (*Perdix cristata* Lath.) pop their heads from out of the bushy spots and shyly draw back as soon as they observe the slightest sign of danger. All is quiet: only an isolated note now and again interrupts the profound silence, and yet the scattered herds of wild cattle, black and reddish-brown, grazing everywhere in the savannah tend to enhance the idyl still more. European cattle have multiplied at an inconceivable pace over the savannah flats south of the Pacaraima ranges especially towards the river Mahu, Takutu, and Rio Branco but not on the flats north and north-east of this range, even upon the Annay and Haiowa which nevertheless are connected with those of the Mahu. The herds of wild cattle that specially graze in the neighbourhood of Pirara probably originate from a farm that was started in 1796 with 50 head by Antonio Amorini and Evora at the junction of the Takutu with the Rio Branco. The cattle increased uncommonly quickly, but as the promoters carried on some rather nefarious practices, they soon got into trouble and had to make over the property to the Government which, up to now, still manages it. Every beast that does not have the Government mark branded on its right thigh is outlawed even on the Brazilian side of the border. On Pirara being taken possession of by the Brazilians a considerable number of excellent cattle was brought to the neighbouring savannahs and pastured in the environs of the village. Friar José had also brought with him a considerable herd which was still under the supervision of the three soldiers who partly milked them every morning before opening the pen, so that we were once more able to enjoy café au lait for a few days. The attempts of the British soldiers to utilize some of the tame oxen for transport turned out rather disastrously because several of the stubborn animals went off and away with the baggage and forced the disappointed drivers to collect it again after being scattered all over the savannah.

865. As the military authorities, like ourselves, did not want to take possession of the Public Buildings, in which Brazilian furniture and property were still to be found, before the arrival of the Commandant and Friar José from Sao Joaquim, and as the soldiers were to stay in the village only until such time as all the baggage had been brought here from the Awaricuru, the latter had pitched their tents alongside the big empty-standing building, and securely intrenched themselves to withstand possible assaults. This action was rather facilitated by the large number of sandbags that they carried with them, so that there was soon to be seen through the loop-holes the sombre mouths of two cannon which, every night and morning to the great delight of the Indians who

were daily gathering in greater numbers, thundered out the commencing tattoo and reveille. Peaceful Pirara had become a fortress. We fixed our own large tents some distance away and up above them erected high flag-staffs from which the British and Prussian colours fluttered gaily in the continuous north-easterly breeze. As all the boathands of the combined Boundary and Military Expedition were still staying in the village, and fresh parties of Indians moreover were incessantly wanting to greet their "Domini" and expressing their readiness to do the transport, Pirara presented every evening a busier scene of hustle and bustle than it certainly had ever known before and which, naturally, will only come again if civilising influences should ever extend into the interior, in which case the present insignificant little settlement owing to its uncommonly favourable situation will needs become of importance. Mr. Youd likewise neither wished to move into his house until the arrival of Friar José, nor hold any divine service in the church built by that individual, for which reason one of the houses that had remained unoccupied was soon fitted up for the purpose.

866. The officers and ourselves all dining together both at noon and at night, our table d'hôte was fairly lively, and as everybody who shared in it had to contribute game and fowl, there was always a most comprehensive and varied assortment of dishes. Of those that were and certainly continued to be most in demand was one made with the *Anas brasiliensis* Linn., a species of duck hitherto unknown to us, and another made of the small tasty partridge, although almost every day we managed to get two to three of the many deer (Waiking of the Macusis) which I took to be a new species.

867. We were still daily looking forward in vain to the arrival of the Commandant from Fort Sao Joaquim, Antonio dos Barros Leal, and Friar José without our being able to explain their extraordinary non-appearance. We were thus sitting up late one evening, happy and comfortable, when one of the soldiers all of a sudden burst into the house shouting "Brazilians," while outside of it also, the calling of the guard and the clamorous voices clearly indicated that something must be happening. Hurriedly rushing out of the house with the torches, we were met by an awful uproar. The word "Brazilians" had awakened the already sleeping soldiers: weapon in hand these came tumbling out of the tents and out of the door and windows of the big house: none had given himself time to put on uniform or trousers: almost the whole of the army stood in closed ranks in their shirts, some of them even armed with two guns, while lighted up by the blazing fire of the watch party and several torches we saw the sentry who had given the alarm standing with fixed bayonet in front of two men on small horses. Since no one spoke Portuguese besides my brother he took the part of interpreter and asked what they wanted—a question to which both replied that they were bringing despatches from the Commandant at Fort Sao Joaquim for the Governor in Georgetown. They were now made to ride close up to the fire where they were regularly encircled by the inquisitive Negroes, the sight of whose armed black figures, it was quite easy to see, did not tend to make the two poor devils, sitting

their horses as if stuck on with glue, feel too much at ease: they could not be blamed for this at all because, as they told us later, they had no inkling of the arrival of the military in Pirara, and had supposed that only the Boundary Expedition was here. After they had been searched for weapons, and had handed over their despatches they were allowed to dismount and pick a spot to sleep in among the soldiers to whose supervision Lieutenant Bingham handed them, while we over another glass of wine had a laugh at the false alarm.

868. Next morning the two vaqueiros rode back to Sao Joaquim with the request to the Commandant to fetch the soldiers and implements he had left behind and six days later we received news that Friar José dos Santos Innocentes would be coming to Pirara. On the day appointed all the military had to turn out in uniform and in conformity with their visitor's rank give him a salute of nine shots with our mortars: the Friar had formerly held the rank of major in the Brazilian army and was known to my brother when previously staying at San Joaquim during the rainy season of 1838 just as intimately as the Commandant was. Everybody was already in uniform when some Indians brought the news that the Friar would soon be here, as they had met him in the neighbouring oasis were he was just then engaged over his toilette. All our eyes naturally turned towards the boudoir out of which the procession emerged not long afterwards on to the top of a small rise that had hitherto hidden the caravan from view. At its head, the Friar in black vestments and bare-headed, by his side a black Brazilian soldier protecting him from the scorching heat with a large sunshade, following him several soldiers without weapons, and bringing up the rear his horse upon which he had ridden as far as the little bit of forest. In measured tread and slow the little company entered the village and amidst the firing of our mortars reached the front of our tents where the pale and gaunt figure was received by my brother and the officers. All political matters remained ignored in the speeches: these were only to be discussed on arrival of the Commandant which was timed for next morning. After Mr. Youd had also waited upon him in full canonicals each withdrew to his own quarters. Already by next forenoon we saw a troop of horsemen riding at a whizzing gallop over the savannah up to the village: at its head we soon recognised Captain Leal with a young woman who was riding straddle-back just like the men. The escort might have consisted of some forty mounted vaqueiros. After galloping also into the settlement the company came to a halt in front of the Friar's house. Captain Leal dismounted and made towards us in company with several soldiers. He also was a gaunt man of medium size with dark complexion and black piercing eyes. In the fateful years of Brazil he had served under the Cabanos, but later on had changed over to the Royalists, and still carried in his left cheek a musket-ball: during some fight this had struck the right side of his face where by knocking some teeth out it had gone through his mouth and remained imbedded in the fleshy part of the left cheek. Although a simple incision would have easily effected its removal, he nevertheless did not seem to be able to part company with it.

869. After the ceremonies of greeting came the turn of political affairs when Captain Leal maintained that he could not leave Pirara until he received orders from Para. Mr. Bingham on the other hand informed him through my brother who also here had to act as interpreter, that he had already brought with him the most definite instructions from London according to which, with the march-in of the British troops not a Brazilian was to be allowed in Pirara, and he could therefore no more permit him than Friar José to make a longer stay. Captain Leal recognised that he had to yield to force.

870. With the exception of four soldiers his mounted escort consisted of vaqueiros in short brown leather jackets and trousers, the head covered with a broad straw hat. The wild-looking horses were of medium size and carried saddles, also covered with brown leather: a guitar hung from some of the latter so that the riders could have been taken at first sight for a troupe of wandering minstrels rather than for the military escort of a high officer on a not exactly peaceful mission.

871. As the Commandant and the Friar were our guests during their stay, the officers like ourselves supplied the table with all the delicacies in their possession so as to make the first meal as sumptuous as possible which we absolutely succeeded in doing. The Friar became especially lively after the emptying of only a few bottles of champagne, which, as he asserted, he had not tasted for 30 years. Stiff ceremony relaxed more and more with every bottle of wine until at last the guitar was sent for and Aberisto came forward with several vaqueiros to play and sing: striking some simple chords on his instrument for half an hour at a time he accompanied the jubilant Friar and Captain Leal as they relieved one another by turns with their songs of folk and freedom, and improvised sentimental ditties respectively. Any stranger who might have noticed us would have had difficulty in imagining two hostile parties at this free and easy dinner party. Even our own Mr. Youd was cheerier and brighter than ever and although speaking but broken Portuguese he entered into friendly conversation with the Friar, so that here again one would never have dreamt that the latter had previously driven out the former, or that the former was now anxious to reciprocate. Only Captain Leal in the middle of his sentimental songs now and again cast over the assembled company the most penetrating glances that distinctly enough betrayed the hostile instincts raging within his breast, which he yet tried as far as possible to hide beneath a smooth and jovial exterior. At dessert Captain Leal drank to the health of the Queen of England, Lieutenant Bingham to that of the Emperor of Brazil, and I to the King of Prussia's: during the toasting, guns were fired, rockets were lighted, and God save the Queen and Rule Britannia were struck up on the bugles. One can imagine what an impression all this must have made upon the Indians thronged in numerous groups around the house as they stared in astonishment at the fizzing rockets shooting into the skies, as they listened to the thunder of the cannon and the general goings-on, as well as at the shouting and the singing in our quarters that were now arranged as for a dining-room.

872. Things seemed to be taking a lively turn in the large house which the vaqueiros and Brazilian soldiers were occupying, because a peculiar sound, accompanied by the tremolo of the guitar was coming from that direction when we got into the open air: the beloved Baducca was being danced, a dance that was repeated every evening during our guests' stay—for how could the pleasure-loving and lively Brazilians let an evening pass without its being performed? As we stepped into the house a handsome corporal was just then dancing with the pretty and fiery young Brazilian woman, Senhora Liberadiña, the wife of one of the vaqueiros whom we had not seen again since her arrival and had forgotten all about. The languishing look she cast at Captain Leal, from whom an equally tender one was returned, expressed clearly enough on her own part that she would rather have spent the day in his than in her husband's company, while a side-glance from the Captain at us showed her that this was unfortunately impossible. The Baducca is always performed in couples and except for a continual snapping of the thumbs consists of the most wanton and obscene gestures and movements of the body, particularly of the artful turning and twisting of the hips, during which both partners, like the Negroes when they dance, now advance, and now retire, the figures being regulated by the monotonous chords of the guitars and by the improvised singing.

873. Captain Leal at our request now let his subordinate retire and started dancing with Senhora Liberadiña as gracefully as possible, both performers trying to bewitch us with sentimental improvised songs of which the officers formed the main subject matter and we the balance. With murmurs of applause, for both had indeed tried to surpass themselves in grace of movement as well as in neatness of execution, the couple finally retired and were replaced by vaqueiros to whom Mr. Bingham's present of rum, that seemed to be just as rare a drink for them as champagne was for the Captain and Friar, had made uncommonly merry and talkative. On the days following they continued to amuse themselves in addition with different round games that reminded me forcibly of the old "Tit-tat-toe," etc.*: these games were all accompanied on the guitar and regulated by its music.

874. As the Commandant had brought no provisions with him from Sao Joaquim, the vaqueiros were sent out in the morning to rope in one of the biggest oxen in the savannah, and they soon returned to the village where it was to be killed with a huge tall well-built steer, the long pointed widely-separated horns of which were particularly noticeable. Interested as I had been in the lassoing, I was the more shocked at the manner of slaughter. After throwing another lasso over its head the latter was pinned down to the ground by an arrangement so contrived that the wildly-struggling beast could not move it. Sneaking with his long sharp knife close up to the chained colossus, a vaqueiro tried to cut the Achilles tendons of its hind-feet immediately above the hoofs which, however, he only succeeded in doing after the fourth or fifth stroke at each foot. After the first stab the distressed beast did its very best to

---

*—"Wer die Gans gestohlen hat, der ist ein Dieb" etc. *i.e.* He who stole the goose is a thief, etc.

keep its tormentor continually in view, but owing to its restrained position was prevented doing so, the vaqueiro in the meanwhile prowling round it like a cat awaiting a fresh and favourable opportunity for the furious creature to stop kicking out behind, kicks which he only escaped through his really admirable agility. The tendons of both hind feet being hacked through at last, the steer now bellowing wildly fell on its haunches to the ground where it supported itself half upright with its forefeet, the tendons of which had now also to be divided. The tortured and furious beast, the whole of its huge carcase trembling with rage and its muzzle sweating with dense blobs of white foam, could now follow every movement of the vaqueiro and watch the blade quivering in its descent, which it tried to avoid by continually stamping its feet. When finally one of these was likewise hacked across, the exhausted animal yet supported itself upon the last remaining one, when it tumbled on its side and still tried several times to rise. With gruesome and revolting laughter the remaining vaqueiros next surrounded the now harmless animal which, quivering and bathed in sweat, tossed its head in all directions, and with a dull heart-rending moan attempted to stand erect, until one of the executioners stuck his long knife several times into its chest. They had tormented the poor brute for more than half-an-hour in the most cruel fashion only because, as the vaqueiros maintained, the flesh became more tender and soft in this way.

875. The perilous and hard life of the vaqueiros who for the most part consist of Negroes, whites, or mulattoes, seems to show its effects upon their disposition and habits. The vaqueiro has always to be in the saddle, the supervision of the immense herds requiring his presence everywhere along the boundaries of his master's estate, here to protect them from the onslaughts of jaguars, there to gallop after the straying cattle which he follows at heel through savannah and forest. In the latter case everything depends upon his riding through the opening made in the thicket by the animal breaking a way in before it closes again; he must keep pressing hard behind the beast until an open space gives him room to throw his lasso. Besides this continual supervision, which often necessitates his changing horses several times a day, he has to see to the branding of his master's animals, and to bring the cattle in for killing. Every farm has its stock-yard, its Rodeio, into which the cattle are annually driven; this is effected by the vaqueiros having previously drawn a cordon around the scattered herds and then gradually closing in as they reach it. It is in the rodeio where the young animals then get their brand-numbers and the required cattle slaughtered.

876. Owing to the Brazilian Government, as already mentioned, having caused a great quantity of cattle to be driven over to the village savannahs when they took possession of Pirara, the Commandant had brought this large number of vaqueiros with him to return not only the Government animals but also those belonging to Friar José back to their old pasture-grounds. Mr. Youd bought six cows from the latter, and three horses from the Commandant, from whom the officers also ordered a riding horse for their common use.

877. The savannah presented an unusually lively appearance now that the vaqueiros with their long pikes (*Spiessen*) and still longer lassoes, astride their quick horses, hunted like Cossacks over the broad grassy plains to collect the widely-scattered herds and chase them back to Fort Sao Joaquim. If any deer happened to be caught in the drive they were all the more certain to become the spoil of the lasso, because their small horns proved no obstacle to the enveloping noose. Senhora Liberadiña who, like an Amazon on her little horse, flew over the savannah with the swiftness of the wind, seemed to have mounted it just to invoke our admiration at her smart pursuit of the deer, and skill in lassoing it. With the first two animals killed, that were slung on her high saddle, she then proudly entered the village, her big toes in the narrow stirrups, her naked heels with pointed spurs.

878. Next day the Brazilians evacuated the village. At the head of the procession—that consisted partly of pack-horses, partly of Indian carriers, several of whom were transporting the vesper-bell on a long rafter—rode Friar José, Commandant Leal, and Senhora Liberadiña. As they made off Captain Leal wished us the following hearty good-bye; he desired nothing else than that he might have to appear at the head of an army before Pirara, so as to repay our hospitality in a way which at the present moment was impossible.

879. Hardly had these guests left us than they were replaced by a new but different lot on the following day. It was a long string of Maiongkongs, a tribe occupying the watershed of the upper Orinoco and its tributary, the Parima. My brother no sooner discovered amongst them some acquaintances he had made on his journey to the sources of the Orinoco in the years 1838 and 1839 than he was recognised by them with the heartiest manifestations of delight. The chieftain, a brother of his guide as far as Parima on that particular journey, spoke Portuguese fairly well, so we got to learn that their settlement was situate on the River Cunucunuma, a tributary of the upper Orinoco, and that he, the chieftain, having been told by his brother that axes were to be obtained in Georgetown, was now on his way there to get some: certain of his people, from hearing my brother talk, still remembered the approximate direction of the capital. They had followed the Orinoco from the Cunucunuma as far as the Cassaquiare and so reached the Rio Negro, had then followed this down to the mouth of the Rio Branco, travelled up the latter to Fort Sao Joaquim, and thus reached Pirara now by means of the Takutu and Mahu. In this way they had within three months covered a distance of not less than 1,000 miles partly by water and partly overland: they now proposed resuming their journey to Georgetown here from Pirara, the approximate situation of which they had also learnt,—to fetch a few axes. They were a big and finely developed people, the greater number of whom measured from 5ft. 6 inches to 8 inches, their body at the same time appearing more compact and muscular and their facial features more rounded than those of the other tribes hitherto known to me. The forehead was small and receding, while the eyes which lay close to each other, were more obliquely slit, and shaded with long eye-lashes; eye-brows and beard were

depilated. Just as with the Caribs the objectionable custom of tying tight bandages above and below the calves of the little girls immediately after birth so as to force the latter to an artificial overgrowth only prevails among the women, it was practised here by the Maiongkong men whose muscles of the upper arm were at the same time swollen to an unnatural size by similar ligatures. Instead of the necklaces and beaded-strings on the ankles and upper arms the women wore cords plaited out of human hair, a material that the men twined round their loins like thick waist-belts, to which the apron was attached. The thicker such a belt (Matupa) the more surely did it bear witness to the courage of the wearer because the hair of fallen enemies is only employed in its manufacture. The aprons of the women were made of cotton fringes and were generally coloured red. The men's elegant feather decorations consisted for the greatest part of thick head-fillets of the red and yellow feathers which the *Rhamphastos erythrorhynchos* and *R. vitellinus* grow immediately above the root of the tail. As the Guinaus, Uanpes and Panixanas, as well as the Maiongkongs manufacture their head-dresses as well as regular mantles out of these feathers, both species of *Rhamphastidae* would soon be exterminated were not an extremely shrewd precaution taken to prevent this destruction of their wardrobe supplies. To this end they only employ a very small arrow smeared with extremely weak poison, with the result that the wound inflicted by such a weapon is too insignificant to be mortal, while the low strength of the urari only makes the bird lose its senses: it falls down, the feathers required are pulled out, and after a short while, it recovers to be perhaps shot and robbed again subsequently. Judging from the number of *Cephalopterus* feathers, particularly the crests and the brilliant metallic breast-tufts, this beautiful bird must be present in large numbers in the land of the Maiongkongs.

880. The articles which they proposed bartering in Georgetown for axes and knives consisted of hammocks, large balls of fine exquisitely-spun cotton, graters, shirts that they call Marima, and the most beautiful hunting dogs. The articles of dress just mentioned, that had already claimed Alexander von Humboldt's attention are made from the inner bast-sheath of a tree, probably a palm that they call Tururi: every shirt certainly costs one tree its life. After this is felled and the outer layer of bast removed, the inner one is pounded until such time as it allows of its being easily stripped from the trunk. The thicker end of the tree forms the body, the thinner one the sleeves, which are sewn on to the former: these are the only seams of the garment. When the people saw that we had knives, axes, in short, everything that they wanted, and that we were willing buyers of their trade, especially their dogs, their friendship was still further cemented—they could now turn straight back home without having cause to build corials beforehand on the Rupununi and travel in them to Georgetown. After a few days' stay all the party returned happy and contented to Cunucunuma.

881. The whole of the baggage was now brought to Pirara, and the boathands of the military expedition as well as our coloured crew, Waikas and Warraus, set about getting ready to take the boats back to

Georgetown. Of our own people there remained only the four Germans, three Negroes, including Hamlet, and the coloured man Hendrick, the coxswain, under whose authority our men were to be placed from now on. The officers who took their departure included the Adjutant, Lieutenant Bush, Police Inspector Crichton and Post-holder McClintock; the military doctor had to go along with them because his sickness seemed to be getting ever worse and worse.

882. On saying good-bye to Mr. Bach, he had promised to pack all consignments of living plants coming from the interior as carefully as possible and despatch them to Berlin, for it was more than a matter of impossibility that I myself could accompany every transport from the interior to the coast. I accordingly seized this favourable opportunity and despatched my valuable and comprehensive collection of living orchids and palms with the boats to Georgetown, in certain hope that they would reach Berlin in good condition. Unfortunately, however, I had to suffer bitter experiences in this respect, although I found at least a certain amount of consolation in the absolute knowledge that nothing it was at all in my power to do, had been neglected.

883. As the military had paid the Indians in cash for the work of transporting their effects, one noticed now amongst the buckeens nothing but neck-chains made of Spanish quarter-dollar pieces, of which many a pretty young girl wore from ten to twelve, as presents from her admirers. Included in this money was almost the whole of the soldiers' pay which, in the absence of other opportunities, was spent in the purchase of fowls, game, etc., from the Indians.

884. After the boat-hands left, general quiet prevailed. Mr. Youd moved into his former quarters where he made himself as comfortable as he could. The house which hitherto had served as church and had to continue so until a new one could be built, was supplied with benches and a simple altar, etc., the missionary at the same time starting to give lessons in which even the grown-ups, particularly girls and women, took part. The population had now increased to 300 souls; the wholly and half dilapidated houses were again repaired, streets to be bordered with new buildings were laid out on a regulated plan, and a site pegged out for a church, so that the work of reconstruction should start straight away with the commencement of the wet season, when the building-materials, palm-leaves, etc., could be fetched more easily out of the distant forests by corial: in short, everything promised that the dreamed-of El Dorado would indeed soon be rising on the former site of the little village. Unfortunately it happened otherwise, otherwise at least for the present. Should however this thrice-favoured tract of country ever be taken up in the future, should civilisation sooner or later make its way from the coast into the interior, Pirara, owing to its favourable situation, would constitute the proper centre whence its products could be conveyed just as easily along the continuous waterways to the Orinoco and Amazon as to the mouth of the Essequibo, an advantage that only a few spots could offer in the hinterland of a continent with lands so extensive and conditions of soil so rich.

885. Although the main curiosity of most of the Indians had been satisfied, and we now on the whole could move about more freely and

unobserved, our quarters were nevertheless surrounded by regular groups of them for hours at a time as soon as we started eating, writing, or reading. At the first of these occupations we must have seemed greater cannibals than they to us. With chaffing faces, continually making funny remarks, and laughing heartily, they criticised not only our actions and viands from a distance, but many of the women stepped with absolute self-possession up to the table, put their hand in a dish, seized a bit of meat, smelt it, threw it back again, and then spat contemptuously. We were absolutely certain of such unbidden and unceremonious visitors when the table was provided with pickled meat, to which they showed such an antipathy that they even held their noses on entering the house; this was a good hint never to let it be missing from the menu. They had a similar aversion to sour dishes. Though they regarded us with pitiful disdain when eating, they were all the more awed and astonished at the reading and writing. They looked upon every printed or written word as something supernatural and followed the eyes of the person reading with the keenest tension, they being firmly convinced that the page betrays their own most hidden thoughts to the reader. An accidental find of a piece of paper proved the greatest treasure for them and in none of the lessons had Youd so many and such studious pupils as in the writing and reading hour.

886. The savannah was now my daily abode: in all directions I roamed the forest oases which particularly afforded rich botanical and zoological results. Though a number of representatitves were missing from the higher orders, because these were only represented by deer, I found the insects not only much more abundant but also representative of families and species absolutely different from those on the coast. Amongst *Lepidoptera*, the *Diurna* and *Nocturna* were far more plentiful here than there; on the other hand I found but a few *Crepuscularia*. Amongst *Coleoptera* the families *Buprestidae, Scarabaeidae, Cerambicidae,* the *Curculionidae* which were loudly effecting the destruction of the mighty trees, and *Chrysomelidae* rendered themselves conspicuous: amongst *Hemiptera* the sub-order *Homoptera* was more numerously represented in the *Cicadidae.*

887. As my present stay happened to strike the dry season of the year I was in a position to explore without let or hindrance not only the low-lying savannah but also the greater portion of the dried-up basin of lake Amucu, on the tall reed and sedge-like grasses of which the marks of the water level during the rainy season could be distinctly traced. The ground was regularly strewn with the empty shells of *Ampullaria guianensis* and *papyracea* Spix. Innumerable Caracara eagles, swarms of waders (*Charadrius cayennensis*), and large grey Ibis (*Ibis albicollis* Lath.) with their peculiar cry rending the air in all directions, as well as *Sturnella Ludoviciana* Bonap., put life into these spots now devoid of water. But where swamps were occasionally found with plenty of water and bordered by *Caladium* and broad-leafed sedge they vividly called back to mind the animated scene at the mouth of the Waini and Barima. Though the brilliant plumage of the red ibis, spoon-bill and flamingo were wanting, the sight of the huge waders was none the less imposing.

Hundreds of giant storks (*Mycteria Americana*), *Ciconia Maguari*, several species of heron and the big glutton (*Tantalus loculator* Linn.) were hunting after their numerous prey here. Were I to draw near one of these spots with my Indian followers our plan of campaign was quickly sketched: like cats we sneaked through the coarse swampy grass to the waterside so as to watch the feathered gathering for a while unnoticed. Solemnly and peaceably the large cranes and storks strutted in and out between each other around the water's edge, and sunned or bathed themselves in it, while a really illimitable number of noisy swamp-fowl (*Podiceps*) and ducks, each species in separate groups, actually hid its surface: the bitterns stood up in it to the level of their plumage waiting for a fish to pass along. When at last a rash movement on our part betrayed our presence to a watchful heron, the whole feathered host rose at a given signal with a truly infernal uproar and hovered around in extensive circles. But although these thousands every time took to the wing in the most disorderly rout, the different genera and species nevertheless immediately separated themselves the one from the other. The huge *Mycteriae* with their featherless neck and head, big beak, and scarlet-red ring at the base of the naked neck, rose just like our storks in circles high up into the air, until they finally disappeared almost beyond range of vision. Only the small *Vississi* ducks with their piping note seemed to be regularly banned from our neighbourhood. As soon as we were discovered my Indians would always jump up to their necks into the water and from this standpoint keep on shooting their well-directed arrows into the crowds swarming around. If the creatures were flying high and so could see the advancing weapon they immediately made an opening for it all round, just like our flocks of pigeons when a bird of prey darts across them. But in effecting such an unruly manoeuvre they often struck each other so violently as to break their wings and fall down stunned. The confusion was still greater when, pushing one another aside like this, two different groups of birds came into conflict. I have then seen from five to eight specimens fall to the ground without more than one being wounded by the arrow. If during such a mix-up the birds were within range of my gun I usually got ten or twelve at a shot. The *Anas moschata* were at all events smarter than the others because, when rising in a body they sought sure safety in flying apart. The bag of a single hunting party was accordingly generally so considerable that we were able to satisfy the wants of almost all our people.

888. From a botanical point of view these swampy situations also supplied me with a number of interesting forms.†

889. The continued activities of the water fowl, in addition to the abundance of fish that the Indians daily brought in, had already indicated how plentifully these watery spots must at the same time be stocked. As the *Lonchocarpus densiflorus* Benth., grew in fair quantity

---

† *Herpestes gratioloides* Benth, which covers almost the whole of the swampy surface *Polygala appressa* Benth, *P. hygrophyla* Humb. Bonp., *P. variabilis* Humb. Bonp., *Sipanea dichotoma* Humb. Bonp., *Pavonia cancellata* Cav., *P. angustifolia* Benth., *Melochia gramnifolia* St. Hil., *Wedelia hispida* Humb. Bonp., *Coutoubea reflexa* Benth., *Licania pendula* Benth. *Limnanthemum Humboldtianum* Griseb.. *Cuphaea micranthra* Humb. Bonp.. *Melvilla* Lindl etc. were the most conspicuous.

close to the sources of the Pirara, poisoning of the water by the milky juice of its roots was the method especially adopted for catching fish. That the poison not only acts upon the respiratory organs as can be recognised from the difficulty in gasping for air and widely opened gill-covers, but that it affects the nervous system to an equal degree is shewn by the generally dilated pupils of the dying fish* Although the giant *Sudis gigas* appears to be fairly plentiful in these waters, the amount of poison must nevertheless be too infinitesimal for its respiratory and nervous systems, because I never succeeded in gaining possession of one of these monsters by this means. Supposing the Indians do not happen to have the root just to hand, they dam off a shallow area of the swamp, and empty the water out with their calabashes, for which purpose they place themselves side by side in a long row, their backs to the dam, and with astonishing rapidity dash the water between their outspread legs over it. As it was impossible for us to consume the spoils of such a fishing venture at one and the same meal, we used to fix up huge boucans (*Räuchercien*) so as to ensure its palatableness for at least a few days to come.

890. That idleness is at the root of all evil was demonstrated only too soon in our previously so peaceable Pirara. Although Lieutenant Bingham had given the most stringent orders that the military were only to stop in the village for a few days, the big building or fazenda proved so eminently adapted for a barracks, that they had up to now clean forgotten about employing his men at throwing up and erecting a Fort away from the settlement. The very serious complaints of the Indians to Mr. Youd, that their women and daughters did not dare venture outside their houses by themselves and that several of them had been made drunk and abused, could not allow him to remain indifferent, and his resolute threat to leave Pirara at once and make open complaint in Georgetown about the neglected execution of their orders, at last forced the officers to look around for a suitable site for the construction of a fort which they found south-east from the river's source where they forthwith commenced the work.

891. As the Boundary Expedition were unable to start on their journey to the sources of the Takutu for several weeks to come, and as the environs of the village and of the lake had already been made the most of by me for the particular time of year, I determined to spend the interval on a trip to the Canuku Ranges where the prospect presented itself of a harvest equally rich in plants and animals. There I ought to find the beautiful "Cock of the Rock" (*Rupicola aurantia* Vieill.) and equally interesting Bell-bird (*Chasmarhynchus carunculatus* Tem.) and as I likewise still dared to hope, the *Strychnos toxifera* Schomb. in flower, the notorious creeper which supplies the chief ingredient of the terrible Urari poison.

---

* The catch for the most part consisted of *Osteoglossum bicirrhosum* Spix., *Acara margarita* Heckel, *Pacu nigricans* Spix., *Geophagus jurupari* Heckel, *Chaetobranchus flavescens* Heckel., *Leporinus fasciatus* Müll. Trosch., *Frederici* Agass., *Anodus alburnus* Müll. Trosch., *A. cyprinoides* Müll. Trosch., *Cichla ocellaris* Bloch., *Crenicichla saxatilis* Heckel, *Myletes rubripinnis* Müll. Trosch., *Myleus setiger* Müll Trosch., and *Schizodon fasciatus* Agass.

CHAPTER IX.

Excursion to the Canuku Range—Watershed between the Mahu and the Rupununi—Awarra village—Virgin forest—Bed of the Quayé—River Nappi—Nappi village—Burial ceremonies of the Macusis—Industry of the inhabitants of the Canuku Range—Weapons—Blow-gun—Ascent of the Curassawaka—Chasmarhynchus carunculatus—Rupicola aurantia—Ascent of the Ilamikipang—Strychnos toxifera—Preparation of the Urari poison—Wassi poison—Return to Pirara—Habits of the Cathartes aura—Preparations for the journey to the sources of the Takutu.

892. The necessary preparations were soon completed, and as my poor Stöckle was just then down with a bad attack of fever, I left Pirara one morning in company with Tiedge, one of our Germans, and six Macusis whom I had hired partly as carriers and partly as hunters, and for that purpose had supplied them, to their great satisfaction, with weapons. Though the path was of so little interest at first as to offer me nothing new throughout, this uniformity nevertheless disappeared after a march of a few hours, when we reached the highest point on this extensive plain, a range of hills, that at the same time constitutes the watershed between the tributaries of the Mahu and Rupununi, and might be some 120 feet above the level of Lake Amucu. The pleasant shallow dales stretched out before me like a large rich carpet interwoven by dark threads of sap-green foliage bordering the numerous streams and innumerable *Mauritia* palms, while far to the southward the two picturesque perpendicular granite crags of the Canuku Range, Nappi and Curassawaka, thrust their sombre summits far above the surrounding vegetation. Wherever any spot rose above the general level, the never-resting ever-restless little troops of termites had formed a settlement. Our path, which from now on lay towards S.W., along the so-called watershed, led us past several of these structures, the height of which measured over 12 feet with a base of 19 ft. in circumference. Now they formed spiral pyramids, now columns with capitals, or resembled giant mushrooms with wide brimmed tops: one sought in vain, however, for the entrance or exit that lay far underground and the only indications of which appeared at a considerable distance away. For solidity, their outer shell is in no sense inferior to our burnt stone, so that they are devoid of all vegetation, not even grass growing on them: in fact, a strong blow is required to knock off a piece. Hardly is this attempted, however, than thousands of the inhabitants rush out of the opened passage. The soldiers show themselves first and are to be recognised at once by their thicker and more elongated head: their mandibles are also much longer, but are fitted over one another more closely and strongly than those of the others. When the danger is past the busy creatures immediately start upon repairing the damage. The building always starts from inside, for which reason no one notices the insects working, their activity being betrayed only at the damp spots visible here and there. According to the different coloured clay which is utilised for

the building material these structures present at the same time an uncommonly variegated appearance. A second species occupy rather the lower savannah; their "hills" are usually only 2 to 3 feet high and have quite the shape of a bee-hive turned upside down.

893. Under a really consuming and scorching temperature of 128° Fahrenheit we continued our course along gently undulating ground, the higher levels of which were overstrewn with quartz and granite fragments and boulders of a coarse-grained quartz conglomerate cemented with ferruginous clay, in between which grew the dainty *Diodia rigida* Chmss. Schlcht., and a new species of the *Cissampelos,* very peculiar in its external appearance, which Dr. Klotzsch has described as *subcrenata.* Tired and exhausted, we reached Awarra village in which we made up our minds to spend the night, so as to gather renewed strength for the following morning. The fairly large settlement was also situate on a small rise. The inhabitants happened to be all in Pirara: only some old women and several small children, for whom the road to Pirara had been too laborious, remained behind. This absence was all the more agreeable to me because I now trusted that I would sleep undisturbed, with which hope in view I immediately threw myself into my hammock. It might have been somewhere about midnight when I was gently awakened by Tiedge, who had slung his bed close beside mine, whispering that he thought our companions seemed bent on mischief. At first I was somewhat startled at what he told me, and raising myself in my hammock saw by the light of the fire, which was still burning, that my companions were also sitting in their hammocks, where they were closely examining the guns in their hands. The one took aim with his weapon, while the other removed the charge and reloaded; in short they kept on practising both operations. This unexpected discovery seemed to me at all events suspicious, but on mature consideration I concluded that they could have no hostile intention in view because not only was the unmistakable good-nature and peaceability of the tribe opposed to any such measure, but the proximity of so considerable a force that had their relatives, etc., absolutely in its power, must have made any surprise attack doubly dangerous. The correctness of my surmise was soon clearly established. The journey had naturally not tired these men, accustomed to such a temperature, so much as it had both of us, and to while away the time they had taken up and scrutinised weapons so rare and important for them: reassured, I lay down again in my hammock and slept until shortly before sunrise when we resumed our journey. Tiedge had certainly not been able to allay his mistrust, and candidly admitted that he had not closed his eyes the whole night. The narrow path still lay ever ahead of us in the open savannah, the rises of which were here and there occupied by low bushes of *Myrtus*, *Byrsonima*, *Melastoma* and *Hirtella*, while the swampy plains were covered with a low growth of grass and occupied by glorious Mauritia palms, elegant *Polygala*, *Hibiscus* and *Convolvolus*: the palms were alive with innumerable parrakeets, the swampy spots forming a promenade for the many *Mycteriae* and herons. Upon the rises which we crossed in the course of the day, the smooth light-brown bark drew my attention to several trees already before the Indians hurried

off to rob them of their produce. The first glance at the ripe greenish fruit which had an extremely sweet aromatic taste, told me that it must belong to the *Myrtaceae* family: I was confirmed in this by several isolated blossoms that the tree still possessed. It was a true Myrtus, which Dr. Klotzsch has named *Myrtus Schomburgkii.* As this same genus strangely enough, notwithstanding the numerous kinds of *Psidium* and *Eugenia,* is only represented by a few species, the discovery was all the more acceptable, particularly because its juicy and aromatic fruit proved at the same time so refreshing in the scorching heat. In the wooded oases past which the path now led, I was also struck with the peculiar *Tillandsia usneoides* Linn. on the living as well as dead and leafless trees: they hung like long horse-tails down from the branches, and were swayed hither and thither by the current of air. Upon looking at this peculiar plant without inflorescence, especially for the first time, it must surely be taken for a lichen. The dead and withered trees with these dependent *Tillandsia* presented a particularly striking appearance; for with the death of the host the parasite also dies though it long retains its position. I have only rarely seen it on the lifeless trunks, generally upon the outermost twigs of the branches and tops.*

894. An extensive swampy flat, into which some white herons and great crowds of waders put some life, and where the most lovely groups of *Mauritia* palm could be seen, alone separated us now from the wall-like virgin forest out of which the densely wooded Canuku Range, with its two remarkable and distinctly prominent rocky pinnacles, the Nappi and Curassawaka, was striving to the skies: the latter in particular rose bleak and bare above the obscure forest like a giant cylinder, its immediate summit being again clothed with thick vegetation.

895. It was high time for us to seek shelter under the forest shadows, because for more than an hour we had been pressing along in a temperature of 134° Fahr., and I must admit that during all this time I was not full master of my senses, for thousands and thousands of glimmering stars kept madly rushing past, until I finally seemed to be rushing through a complete rain of fire with everything at the same time swirling and circling round me. The same thing happened to Tiedge, but neither of us was in a position to bring a single word out of our parched-up mouths. What with the burning and scorching rays of the sun from above and the reflected heat of the savannah from below, we thought we were treading on hot slabs—truly it was almost unbearable.

896. While making our way over the swampy flat, a relief from our distress, I noticed several *Cyrtopodiae, Galendra juncea* and *Baueri* Lindl., *Habenaria longicauda Hook.*, and the *Monachanthus viridis* Lindl. On arriving at the banks of the Quayé, we greedily sought in vain the refreshing and cooling waters which the glowing sun had long ago consumed: its bed like the banks of the Amucu lay full of shells of

---

* On the edges of the wooded oases which we passed I found particularly plentiful:—*Helicteres guazumaefolia* Humb. Bonp., *Apeiba Tibourbou* Aubl., *Herpestis gratioloides* Benth., *Cassia undulata* Benth., *C. viscosa* Humb. Bonp., *Peltogyne paniculata* Benth., *Mimosa floribunda* Willd., *Miconia brevipes* Benth., while the thorny *Entada myriadenia* Benth. covered whole surfaces of the undergrowth with its white blossoms.

the *Ampullaria guianensis* and *papyracea* Spix. But what passionate mollusc-eaters the water and swamp-fowl of this district must be, for amongst the thousands of empty shells not a single one was found uninjured!

897. After crossing the dried-up swamp, we were confronted with a large provision field of growing *Musa* and luxuriantly thriving sugar-cane and soon stood in front of a small lowly and miserable empty house. Curiosity had also driven the occupants to Pirara: legions of hungry fleas alone remained behind to attack us with such raging greed that my trousers were completely dotted with them while the Indians tried to keep free by stamping with their feet. The longed-for rest which it was therefore impossible to get inside the house had now to be found outside, when the Indians brought us the ripest of bananas and the juiciest of sugar-canes, so that with the help of the latter our frenzied thirst was somewhat soothed.

898. After a few hours' rest we resumed our journey through the sombre and shady forest, the thickly interlaced tree-tops of which recalled to mind exactly the giant vegetation of the Upper Barima. Had we not been able to follow a much frequented path, the innumerable *Heliconiae, Rapateae, Bromeliae, Calathea, Alpinia latifolia* Willd. and huge ferns and tree-like grasses would have offered obstacles which we should have had difficulty in overcoming in our present exhausted condition. The huge *Bombaceae*, often more than 160 feet in height, specially interested me on account of their curious root-necks. One could almost regard the radiating tabular roots, if one may thus designate these peculiar structures, running out from the trunks in some trees ten to twelve feet above the ground, as the normal buttresses which Nature has lent the colossal trees to protect them against the fury of the tropical storms. When the Indians want to fell a tree of this description they erect a scaffolding that reaches up to the real trunk. I also found the *Spondias lutea* uncommonly plentiful here: its ripe fruits perfumed the whole forest. Amongst the palms new to me, I was very much taken with the *Iriartea ventricosa* Mart., *Bactris concinna* Mart., *B. mitis* Mart., *Chamaedorea pauciflora* Mart., the delicate *Geonoma acutiflora* Mart., *G. laxiflora* Mart., and the tall slender *Acrocomia sclerocarpa* Mart., all of them forms with which von Martius had already made us acquainted, but which, however, were seen by me for the first time, while those that were familiar to me, the *Oenocarpus Bataua* and *minor*, *Lepidocaryum gracile*, *Euterpe oleracea*, *Maximiliana regia*, *Desmoncus polyacanthus* and *macroacanthos*, *Bactris* and *Astocaryum*, were extremely numerous in situations that were damp.

899. After pursuing our course for several hours on a greasy soil of clay and sand in continued twilight, because the dense foliage and the innumerable creepers, that formed the most fantastic festoons and figures, only allowed a few sunbeams to pass, we reached the small river Nappi, where we were able at last to quench our burning thirst. A huge tree that had fallen across the stream served as a bridge. Several travellers' houses showed that this place must have been frequently

used as a camp, just as happened to be now the case, by a party of Macusis who had returned from a fishing excursion with a big catch, the greater number of which consisted of *Erythrinus unitaeniatus* Spix. Although we could have reached Nappi settlement, the terminus of our trip, even to-day without any great effort, we nevertheless determined to overnight it here with the strangers, who gladly shared their harvest with us. Several bright fires soon blazed under the pots, and their columns of smoke curled lightly up between the dense foliage of the giant trees. I also had many an opportunity here of admiring the acute perceptive sense of the Indians for every sound, for every noise. Hardly had any note or only a rustle attracted their attention than they likewise designated the animal, were it a bird or an insect, by which the one or the other was produced. Many a bird that was even yet perched in among the verdant branches, was roasting a few minutes later on a spit over the fire.

900. With early morn we were up and away through the dense forest. The wild screeching of the parrots, in conjunction with a note, sounding at regular intervals, which I can only compare with the lowing of a calf, greeted the early dawn: I could not believe that this note proceeded from a bird until I confirmed it myself with my own eyes. It was the Capuchin bird (*Coracina calva* Tem.) remarkable enough in appearance already. The bald head which makes it look exactly like a philosopher engaged in the deepest speculation, is assumed only with advancing years: in the younger birds it is covered with a whitish down. I have never met the creature so plentifully as in the Canuku Range. The lovely chime of the bell-bird also reached me from different directions through the silent forest, but I did not see the songster on this occasion either.

901. After several hours' further advance through the dark forest, during which I continually had to admire the Indians who, in spite of their heavy load, nevertheless hurried at such a pace that Tiedge and I could hardly keep up with them along the path which was too narrow to permit of my even turning out the tips of my toes, the green walls finally thinned and we stood once more on the banks of the little river Nappi, in which several women and children were just then taking their morning bath. Nappi village spread itself out before us on the opposite shore. As the bathers noticed us Europeans they fled in great commotion and excitement to the settlement, where they started all the residents in an uproar with the cry of "Paranaghieri." The village comprised seven houses, out of the doors of which the anxious mothers and children stealthily peeped, while the men, coming towards us, welcomed me by passing the flat of the hand from side to side in front of my face and then shaking hands. Among the men I found several who had been engaged in Pirara with the transport of the baggage and I had not yet been five minutes in the village when a pretty girl greeted me with a drinking cup full of nice (!) paiwari: she was so nervous and confused, however, that at first she remained standing quite a while some distance off, until emphatically told to proceed by her mother's threatening voice audible from the house. As the poor thing drew near she was so overcome with fear and trembling that to my great joy she spilt the largest

portion of the drink: my previous disgust had nevertheless so far vanished that I was able to swallow the liquid without any serious remonstrance on the part of my stomach. Others on the other hand brought the pepper-pot and freshly-baked bread, which was laid on plates (Sumpa) plaited with *Calathea*; if special characters are interwoven in these plates they are called Woro. As I wanted to make Nappi my headquarters for the mountain trips, I fixed myself up as comfortable as possible in the Strangers' House: the residents, who in the meanwhile had gleaned from my companions that I intended staying with them for some time, lent me a helping hand.

902. Although we must have reached fairly close to the base of the Range, the high virgin forest nevertheless obscured its view. The settlement numbered a population of 60 souls. Instead of a mud wall as I had hitherto noticed in the Macusi houses, the dome-shaped roof rested upon a scaffolding interwoven with palm-leaves, for the savannah was quite wanting here in the former material.

903. The next morning was to present a recurrence of one of those scenes of confusion and terror, to which also on this occasion I could not remain wholly indifferent. At least half the population were just then standing inquisitively around and looking longingly and admiringly at the things and articles of trade that I had brought with me, when suddenly a loud shriek ringing through the forest set all the residents in the most obvious terror. It was thereupon soon repeated a few times until I was finally unable to distinguish the word "Caraiba" distinctly. At the first moment the inhabitants were turned into downright lifeless statues mechanically repeating the dreaded word "Caraiba" like echoes of these shrill cries: but half a minute did not elapse before the most terrible uproar followed upon the silence. Yelling wildly the women seized their children and disappeared in the neighbouring forest while the men rushed into the huts, and soon emerging with bows, arrows, fighting-clubs, weapons and knives, both the latter of which they had recently obtained from us in Pirara, hurried to the spot whence the warning call proceeded. Nevertheless before getting there they were stopped by the oncoming rush of a young Macusi, around whom they formed a circle in a twinkling, while he, out of breath and making some lively gestures, said a few words to them and pointed with both hands to the forest. As far as I was concerned, the only word intelligible was "Caraiba," which some of the belated female refugees still continued to shout at me. I am convinced that just at this moment of uncertainty I may not have posed exactly as the model of a hero to an uninterested observer, for I could not but believe that it was a body of Brazilians who were marching to Pirara to wrest it again from the English, on which account I already saw in my mind's eye all my "trade" as well as my valuable self in the hands of the advancing enemy forces. Similar fears must also have seized Tiedge: his look of despair at least prompted such thoughts. The first thing we both did was to carry the guns and other valuable articles into the bush, whereupon I hurried with a double-barrelled gun after the men who had already made their way into the thicket. Yet before I had got there, a loud noise drew my attention aside to where several Macusis with three Brazilians in their midst were to

be seen upon the open flat. They were vaqueiros and, in fact, members of Captain Leal's party who, immediately recognising me, hurried up and told me they were deserters on their way to Pirara. My poor knowledge of the Portuguese language made our mutual intelligibility none too easy, and it required some considerable time before I could satisfy the curiosity of the Indians, who on the tip-top of expectation, were surrounding me. Quiet in the camp was soon restored, but the word "Caraiba" remained current all day. After the three refugees had refreshed themselves, they set out for Pirara, where they could be sure of receiving an open welcome, being very much required there for catching wild cattle: hitherto these had had to be hunted, with the result that not only was a portion of the meat always left behind in the savannah, but if the animal had been killed at any distance away that which was brought home arrived in the pot with a high flavour.

904. Among the many domesticated animals met with at the settlement I was specially interested in a full-grown water-haas. The creature was so tame that it regularly stuck to the heels of the women. Although the river Nappi flowed past the houses not fifty paces away, it never visited its favourite element otherwise than in company with the women when they went to draw water, and even then only to drink: with the loss of its liberty, its natural instinct for water seemed to have been lost. I also saw for the first time a hokko hen (*Crax tomentosa* Spix.) that is only met with on the savannahs, particularly in the oases and forested edges of the savannah streams. Among tame birds it is said that the *Psophia crepitans* and still more rarely the hokko hens are the only ones to breed. I have never met with small groups of *Crax tomentosa* in a natural state, but always only two to three together at a time: the peculiar gurring and purring bass note that slowly issues from the uncommonly long and repeatedly tortuous wind-pipe is only rarely to be heard in the tamed specimens; their flat nests are built out of brushwood in the angles of the branches, not high from the ground: the two eggs are white and somewhat larger than those of our ordinary fowls.

905. Our first hunting expedition was richly rewarded because I not only brought home with me a magnificent deer, but also the brilliant Fire bird (*Ampelis carnifex* Linn.). Unfortunately I was unable to get Tiedge to skin either the birds or mammals, and if I did not want to let my booty spoil I had always to call Night to my assistance. I anxiously looked forward to the helping hand of Stöckle, who had promised to follow me as soon as the fever allowed of his doing so.

906. I had soon made friends with the little boys and girls, and not a day passed on which they did not bring me some insect or other, in most cases, of course, in such a state that it was unable to be made use of, but I had to take the good children's will for the deed. Judging from these finds the environs of Nappi would seem to be especially rich in insects, but particularly in *Coleoptera*, *Lepidoptera* and *Diptera*. I paid a pin for every beetle I wanted. During the day I was generally present in the village along with Tiedge. After the customary morning bath in the neighbouring river the man went off with bow and arrow, the long blow-gun or the fishing gear to hunt and fish, while the wife betook herself to the

provision field with her children and the whole of her tame live-stock, either as advance or rear guard. The housemaster usually leads the procession until the parting of the ways in the forest later on. The village, so full of life but a short while ago, soon looks as if it were abandoned; only here and there one occasionally sees an inquisitive old granny at the door of a house, or a couple of small boys rolling and romping around in the dust. Burdened like the mother, the little girls have to follow her to her work, to be at hand in all her female duties, and help her maintain in the field the fight against the forest, that is ever striving to recover its lost territory again. As night draws nigh one sees the residents hastening home from all directions, the men with their trophies of the chase, the women with loads of manihot, bananas and sugar-cane, and the deserted settlement soon resumes its former scene of the busiest activity.

907. On the fourth day of my stay, about evening time, the shouting and screaming of several boys who had just bathed and now came rushing into the village with the words "Paranaghieri, Paranaghieri!" indicated the advent of the longed-for Stöckle. From what he told us the military were just on the point of leaving the village to erect the Fort that has been previously noted. On the following morning Tiedge was to return to Pirara with the Indians who had brought my servant here.

908. I had already found on my arrival a sick woman whose condition was daily getting worse. The indifference and apathy with which the people treated the helpless creature, whom they left lying unnoticed in the house during the busy part of the day, made an unpleasant impression on me. I was yet lying in my hammock one morning after Stöckle's arrival, and he was also resting after his exertions of the day before, while Tiedge had already gone to bathe at the riverside before setting out on his return journey, when a noisy shriek and uproar as well as a gunshot in the sick woman's house at once made me wide enough awake. Startled, I raised myself and found Stöckle already in the same position with a disturbed and anxious countenance and looking in the direction whence the sound proceeded. A second shot was now heard and the screaming still further increased. Out at once I jumped to the ground to satisfy myself as to the cause of the unusual row, when I just happened to catch sight of Tiedge's head: he had taken French leave behind a tree, probably to protect himself from the death-dealing bullets. A third shot then rang out and women and children came rushing out of all the houses wailing any crying in a terrible fashion. No bridle could now curb my curiosity. I quickly rushed to the house of uproar and was about to enter when I felt myself held back by Stöckle, who implored me by heaven and earth to desist doing so, because only murder and death could be rampant there. I certainly did not discover murder, but only the wan hand of Death, for the poor sick woman had just died. Every minute the space was being gradually filled by weeping and wailing women who, holding their likewise squalling children by the hand, surrounded the hammock wherein the corpse lay, shook the bed of death, wrung their hands, gave vent to cries enough to pierce one's very marrow-bones, and at the same time expressed such deep suffering and such unfeigned sorrow as

to arouse my deepest sympathy. Had it not been that the wish to attend the further events of the funeral ceremony were too forcibly awakened in me, the sounds of lamentation and affecting signs of sorrow would have driven me from the house of death. After the neighbours had given their grief full scope for a while, they started interpolating certain sorrowing refrains in between all this lively expression of their feelings: the one mourned that she had lost her best friend, another glorified the fine cotton thread that the deceased used to spin, the beautiful pottery that she was wont to make, and yet others related all the good qualities that she was possessed of, while each separate eulogy closed with the shudderingly expressed words "Asamanda, Asamanda (dead, dead)!" The men as well as the widower squatted on the ground, in the meantime without saying a word or moving a muscle: only the deep breathing betrayed they were alive.

909. The son rose out of the silent circle and prepared to dig the grave within the house. Up to the present moment my ear had not heard the highest pitch of an Indian death-song by a very long way because hitherto the lamentation, as compared with what was to follow, was like what the zephyr is to the raging storm. The female and juvenile occupants of the village still remaining now gathered inside the building and each new-comer exerted her utmost with the most vigorous support to reinforce the howling, for I can only thus describe the uproar. After the son had dug the trough-like grave some three or four feet deep, the relatives of the family, accompanied by the wailing chorus of the women, commenced emptying the house and putting outside all and everything that happened to be there, were it household goods, hunting or fishing implements. As soon as the last article had passed the door, in came the Piai who, by howling and yelling the whole night before, had tried to mollify the Evil Spirit without, however, succeeding in rescuing the chosen sacrifice from its toils. With an earnest and solemn countenance, he took up his position at the head of the corpse, bent down towards her left ear, and after shouting several words into it at short intervals, again withdrew. The relatives then loosened the hammock from off the beam, bore the body in it to the grave, which in the meantime had been lined with palm fronds, lowered it into the ground and then drew the hammock away from underneath. The expression of grief now indeed bordered closely upon the animalesque, and the sympathy I had hitherto felt commenced to disappear: a real madly-shrieking fury seemed to have seized the whole crowd, so that under the circumstances I thought I had to fear the worst. The whole of the relatives next circled round the grave, and as each reached the spot from whence he had started, he made a spring over it; even the barely twelve-weeks-old orphan was taken up in arms and made to jump it.

910. Up to this time the sorrowing widower had been squatting silent, apathetic and unnoticed, in the house, the whole ceremony seeming to have passed off without making any impression on him. He now suddenly aroused himself, seized a calabash which, filled with red pigment, stood at his side, stepped up to the still open grave and after strewing its contents over the corpse smashed it above her in such a way that all the chips fell

in, while the portion that he had seized in his hand and still retained, he slung out of the door. During this ceremony the relatives had retired to a distance, to return now with all sorts of trifles, e.g., little bits of bone, fruit, bread, which they threw upon the corpse, whereupon the latter itself was overlaid with small split stems of the *Euterpe oleracea,* which were most carefully fitted one into the other. This being completed, the Piai again stepped forward with a bundle of hair in his hand, bent down into the grave, removed from the corpse's head so many of the laths as would allow of the whole face being seen, spat on it, stuffed the hair into the ears and mouth, continuing to spit all the while, and, after addressing it in an abrupt and harsh tone, finally withdrew. The laths were now again carefully replaced and covered with palm-fronds. In the meanwhile several of the women wailing all the way, betook themselves to the neighbouring stream where they drew water which, on their return, they handed to the deceased's widower and sister, who, pouring it over the soil that had been removed, mixed it to the accompaniment of loud expressions of grief: they heaped it over the palm-fronds to the depth of about a foot, so as to prevent the ants disturbing the repose of the dead. The widower then laid several of the deceased's belongings on the top of this compact mass and filled in the grave completely. My ears were now at least freed from the terrible uproar, for the mourners all of a sudden stopped their howling and left the house, which the occupants cleared with the utmost care, at the same time bringing back the things that had been thrown outside. But before this, they had carefully searched for the rest of the deceased's property which now, together with her hammock, were burnt outside the building: the widower next scattered the resulting ashes around the house, and lighted on top of the grave a fire which he kept up for some hours, but the wood remaining unburnt, as well as the spent ashes, were left lying on the mound. The burial ceremony ended with that—only the deceased's sister, who occupied the same house continued to give expression to her grief and croon her lament for another three weeks, both by day, especially on her return from the provision field, as also at midnight, fortunately, however, by herself alone. During the period of mourning she had to discard her strings of beads as well as every other ornament. This mourning, if not to the same degree, is sacredly observed by all the tribes. The Macusis, as I have just mentioned, lay aside all decoration, paint themselves plentifully with arnatto, and cut off their long hair; the cheerful expression does not return to the now solemn countenance until it has grown again to a fixed length. The nearest relatives on the following morning had painted themselves from top to toe with arnatto. the relatives of the second degree only the feet, legs and arms. those still more distant only the hands and feet. The house in which the deceased lies, if not abandoned by the occupants immediately after the interment, is certain to be deserted soon after.

911. In spite of the Piai's methods not having proved successful, I saw that his useless trouble had been richly recompensed by the widower with such articles as he had recently earned at Pirara only by bitter sweat in transporting our luggage. The word Piai is one of those few

that are in use throughout almost the whole of Guiana, a circumstance which, judging by analogy from several other practices, has led me to the opinion that this office did not have an independent origin in every tribe, but has arisen in some particular one, whence in the course of time, it has been gradually adopted by the others: this view becomes all the more probable from the fact that, generally speaking, the simple religious convictions of each, so far as their main essentials are concerned, entirely correspond. Although during my stay in the interior I had many and many an opportunity of associating with those learned folk, I never discovered in any one of them a higher stage of culture or a deeper medical knowledge than I did in the lay fraternity. Their whole business lies in making noisy and at the same time crude exorcisms, accompanied by spitting, sucking, squeezing and smoking of the sick areas, in the utterance of unintelligible expressions, in the skill with which, through the use of narcotics, they can transform themselves into a condition of wild ecstacy, and particularly in the art of ventriloquism. Though they also possess some botanical knowledge, inasmuch as they call all plants by particular names and recognise their main properties, it nevertheless seems that this knowledge has not in any way been advanced with the passing of the years, but has only been handed down as an unchanged heirloom from father to son. If the Piai has no son of his own, he picks upon the craftiest from amongst the village boys and takes him to the most remote recesses of the forest, where he gradually makes him acquainted with the technique of his future career, until, after a few years' time, the latter has imbibed the whole course of instruction. He who up to the present has disappeared from among his people, returns now as a learned physician, etc., in the midst of his tribal relatives, but more like a skeleton than a human being. In the presence of others a brew of tobacco leaves is his drink; a bit of cassava bread his nourishment. During his apprenticeship he is not allowed to come into any contact with Europeans, as he would thereby lose his influence over the spirit world for evermore. When the apprenticeship is completed, his teacher receives most valuable presents from the parents and relatives as he hands the novice the mystic rattle (maracca of the Macusis, etc.) The outward sign indicates the office: the sombre and gloomy look, the lonesome solitary life and the ascetic austerity alone betray the Piais. They preside in the gatherings as well as at the dances, and with their maracca act as masters of the ceremonies. The whole village is subservient to their will absolutely. Their influence appears to be especially marked over the female sex, it being generally noticeable that their wives are always the most beautiful in the whole village, and yet their power is not less marked over the others less favoured.

912. However impenetrable the halo with which the Piais know how to surround themselves amongst their tribal relatives, they nevertheless fight shy of the Europeans, but more especially of the Missionary, because their evil inner consciousness seems indeed not without reason to cry out "These people will see through you." If one asks in a village for the Piai, the answer always received is that there is none present: chance alone will make the stranger acquainted with the dreaded personality.

913. My "trade" proved so tempting to the inhabitants of Nappi and the surrounding villages, that I was able to send along with Tiedge to Pirara twelve Indians loaded up with cassava bread, yams, potatoes and huge pine-apples. The first of these articles was particularly required for our journey to the sources of the Takutu, because it keeps in a palatable condition for years and is never attacked by worms or insects: a phenomenon that is all the more extraordinary because, except for cassava bread, I have learnt of really no other destructible object whatever that is spared by them. The women, likewise here, generally asked only for beads, while the men who wanted axes, knives, powder, files and suchlike, offered me their war implements, hunting kits, and feather ornaments, amongst which the stately feather cloaks (Warara-raucui) stood conspicuous, with the result that my house soon resembled a rich ethnological museum.

914. I have already noted that the technique always became more and more advanced in proportion as we penetrated further into the interior.* More overwhelming demonstrations of this fact were to be found here. Considering the absence of every tool for minimising labour, and that in the manufacture of their weapons, etc., they had been hitherto obliged to have recourse, generally speaking, to stone or bone knives, their arms and implements were nevertheless fabricated with a neatness and taste that would have put a European handicraftsman to shame. The weapons were generally made from the hard central part of the trunk of the giant *Lecythis* or *Brosimum*. But if one considers the trouble already entailed not only in the felling of such a tree by people amongst whom axes are still a rarity, but also in the working up of the heart-wood: if one bears in mind the cutting of it without saws and then its transformation into a war-club or a bow, one's admiration for the patience of these people is increased all the more. I frequently saw subsequently how they took a piece of old iron or an old cutlass, broke notches in it and used it as a saw, a whole day being then required to cut but an inch deep into the timber, which was as hard as iron. To be sure, the Indian only works when he feels inclined, and spends perhaps several months and longer in the manufacture of a bow or of a club: time has no value for him, and he gladly gives the labour of many a toilsome hour for a knife or for a file. Their weapons consist of bows and clubs (Taikeh). Each tribe has its peculiar shape of club although, according to its special requirements, the one tribe adopts the shape of another. Thus I found among the Macusis a form of war club that otherwise is peculiar to the Maiongkongs only. Starting at the lower extremity in a long sharp point, the club gradually broadens out more and more until it ends above in a blunt projection. The handle is more towards the middle. The sharp point is said to be for the purpose, when the enemy is downed, of sticking it into his ear and then driving it into his brain. For battle itself they take only seven poisoned arrows with them: when these have been shot the combatants engage in hand-to-hand fighting and the clubbing commences. To make the blow of a club more effective they often also smooth a piece of hard sandstone into the shape

---

* See Section 802 and Subjoined Note.(Ed.)

of a celt, and fix this into the broad side of the club. These club-celts possess an extraordinary, I might almost say absolute, correspondence with the old German fighting celts, which we now so often find in prehistoric graves (*Hünengräbern*). The tips of the arrows consist either of the spine of a sting-ray, of fish-bone, bone, or a spear-shaped piece of bambu to which they ascribe poisonous qualities. With this latter they chiefly kill tapir and bush-hog. Amongst the weapons that proved of the greatest interest to me was the blow-gun, a hunting implement that I had never before met with in such numbers amongst any tribe or in any settlement as here, for even every little boy possessed a miniature one. The complete hunting outfit consists of the generally 12 to 14 foot long blow-gun (Cura of the Macusis, Ihrua of the Paravilhanos), the quiver (Muyeh), arrows (Cungwa), the lower jaw of the voracious pirate-fish (*Pygocentrus niger*), the seed-covering ("silk-cotton") of the *Bombax globosum* (Assaréh), and the fibres of *Bromelia Karatas.* But of the whole apparatus, the Macusis finish only the latter parts: they obtain the blow-gun itself in barter from the Arecunas, Maiongkongs, and Guinaus. The dexterity with which they handle it is really worthy of admiration for they can accurately and forcibly drive the arrow, over 12 inches in length, along a horizontal direction into an object more than 50 feet away. Small mammals and birds are the main quarry for this hunting weapon, although bigger game are now and again killed with it, the result, however, certainly depending in such cases only upon the strength of the poison. It is a peculiar phenomenon that the effects of the poison are rendered visible considerably quicker in apes than in other animals of corresponding size. The plant (*Arundinaria Schomburgkii* Benth., Curata of the Macusis) which supplies the main ingredient of the blow-gun, grows only in the country of the Guinaus and Maiongkongs, on the upper Parima, and probably in the environs of the sources of the Orinoco, where my brother first discovered it. The stalk rises quite cylindrically from the rhizome without any nodes often to a height of 15 feet, when the first little branches are given off, and the nodes continue at regular intervals of from 15 to 18 inches up to a height of 40 to 50 feet. The adult cane is usually 1½ inches in circumference at its base, has a brilliant green colour, is smooth, and contains a somewhat more than ¼in. diam. cylindrical cavity. The Indian invariably chooses only the young stalk for the manufacture of his weapon. Having cut such an one to the required length, he holds it above a moderate fire, over which he rolls it along its own axis, whereby shrinking is prevented, until he believes that the greater part of the moisture is evaporated, when he hangs it up in the sun until such time as the yellow colouring shows that all the remainder is removed. But as such a weapon would be so easily exposed to damage on their hunting excursions, the Indians manufacture a sort of sheath out of the slender and thin stem of a palm, belonging to the family *Areccineae*, into which the cane is driven and fastened: for this purpose the stem, as straight as a thread, is placed for several days in water and the decomposed pith then pushed out with a rod. They called the sheath Curura-curapong. A second kind of blow-gun, which nevertheless is much heavier, is found amongst the Indian tribes of the Rio Negro and Amazon streams: it only consists of the slender stem of a palm which is split into two halves, out of which the soft inner cellular tissue is carefully scraped, the cavities smoothed as neatly as possible, and the two halves then tied up again and cemented with bast and resin.* While the Indian of the Rio Negro attaches to this a mouthpiece of another timber, the Macusi binds the extremity that is put to the mouth, with a thin thread, and attaches to the distal opening a sort of protective cover made from half the stone-fruit of the *Astrocaryum Tucuma,* so that if it strikes the ground it cannot get stuffed up with earth. The little arrows for shooting with the weapon are about a foot long and manufactured from the midrib of the *Maximiliana regia.* Their needle-like tip is streaked for an inch long with poison which must be dried hard in the sun. The plaited hunting quiver, which on the outside is thickly covered with resin (Mani) and wax (Caraman) to keep off the wet and rain, is supplied with a tightly-closing cover made of maipuri skin; it generally contains 4 to 500 of such arrows that are threaded on two strings and then rolled tightly around a somewhat longer pencil, at the end of which is fastened a ring that exactly fits the cavity of the holder, so that their tips are protected from knocking against the bottom of the article. From outside the quiver there hangs a small bundle of *Bromelia Karatas* fibre used for fixing in position the *Bombax globosum* "silk-cotton" which is wound upon the base of the arrow: this cotton serves to block the aperture of the gun, and being so light exercises a minimum effect upon the trajectory. Likewise tied to the quiver is a miniature basket containing *Bombax* seed-husks, as is also the lower jaw of a pirai. The sharp teeth on the latter are used for putting a point on the little arrows when necessary, and for nicking them to about a third of their thickness immediately below the poison, so that on striking the game, especially with monkeys, which pull out the little weapon directly they feel pricked, the innocent portion breaks off and the poisoned end remains in place. The shape of the above mentioned miniature baskets are at the same time indicative: the different Indian tribes can be recognised from them. Just as we, when hunting, take only as much ammunition as we believe will be required, so does the Macusi smear with poison only so many arrows as he thinks may be necessary.

915. In his right hand, the blow-gun, and on a short loop slung over his left shoulder the quiver and its appurtenances, which he can press against his chest with his arm, the hunter hastes to the forest and makes his way with this awkward implement into its utmost recesses to search for monkeys, hokko hens, yakus, trumpet birds and other creatures. The skill that he develops in this connection is surprising. Though the animals be perched upon the highest densely-foliaged trees, they do not by any means find themselves out of reach of the blow-gun, the arrow of which can be driven to a height of over a hundred feet. Lightly and

---

* Mention is made of a third kind in Roth's "Arts, Crafts and Customs of the Guiana Indians" [in the Press]. (Ed.)

without a sound, so that the dead leaves under his feet hardly seem to move, and the European's ear would try in vain to catch the fall of his footstep, the Indian glides along until he finally reaches the tree on which he hopes to find his prey. Nothing escapes his trained and sharpened senses, his ear is open to the slightest note, his eye to the almost unrecognisable variation in the foliage colour. Should the searching and the spying produce no results after a time, he imitates in a most striking fashion the call of the bird he wishes to capture, and so decoys it from tree to tree until within range, when as quick as thought the arrow is shot out of the gun and never misses its mark. But if, in spite of all his cunning, he should still get nothing, the residents do not see him return: he waits for the evening, sneaks in as if with an evil conscience, fails to exchange a word with his family, and but throws himself in his hammock, whereas next day perhaps, laden with spoil, he will enter the village in arrogant and noisy delight.

916. When the Indian goes to hunt larger four-footed animals, he generally takes his bow (Urapa) and certain arrows (Urari-Epou) headed with a piece of hardwood, 6 inches long, which at its free end carries a one-inch deep square hole. The poisoned tip, that can easily be removed, is stuck into this. These arrows are also used in battle. While not in actual use the hunter covers his arrow with a piece of bambu to prevent accidents or stop the poison being washed off when rain sets in. He likewise carries at his side a hollowed-out piece of bambu-cane with cover, in which are to be found the remaining poisoned tips, which are also cut across at different spots up to a third of their breadth and thickness so that, when an animal is shot, the arrow may break off by its own weight and not be broken in pieces by the wounded animal dragging it through the thicket in its race to death.

917. Although it had not hitherto worried me, I found on my arrival at Nappi several of the villagers down with fever, an illness to which that particular woman had also apparently succumbed, and so the discordant noise of the piai accordingly remained my evening lullaby. One of the symptoms that frequently accompanied the fever here was a violent dysentery that mostly brought the malady to a rapidly fatal issue. I was interested at seeing steam applied as a remedy in certain diseases at this settlement, for which purpose one placed beneath the hammock of the patient large vessels with water, into which were thrown glowing hot quartz-stones. Besides fever and dysentery there is in particular another disease indigenous to the occupants of the plains who call it *Viccis*. It generally begins with slight fever that usually remains quite unnoticeable at first, but pains in the knees, heaviness of the limbs, and a constant inclination to sleep, are soon associated with it. Unless very prompt measures are applied by the commencement of this stage, a speedy death is the infallible result of the omission: the patient begins to be delirious—but in a strange way, this commonly assumes only a cheerful aspect—and the muscular activity of his digestive organs becomes so relaxed that the motions are passed involuntarily. Astringent decoctions

and lime-juice are the measures which, taken at the beginning, prove to be the best*

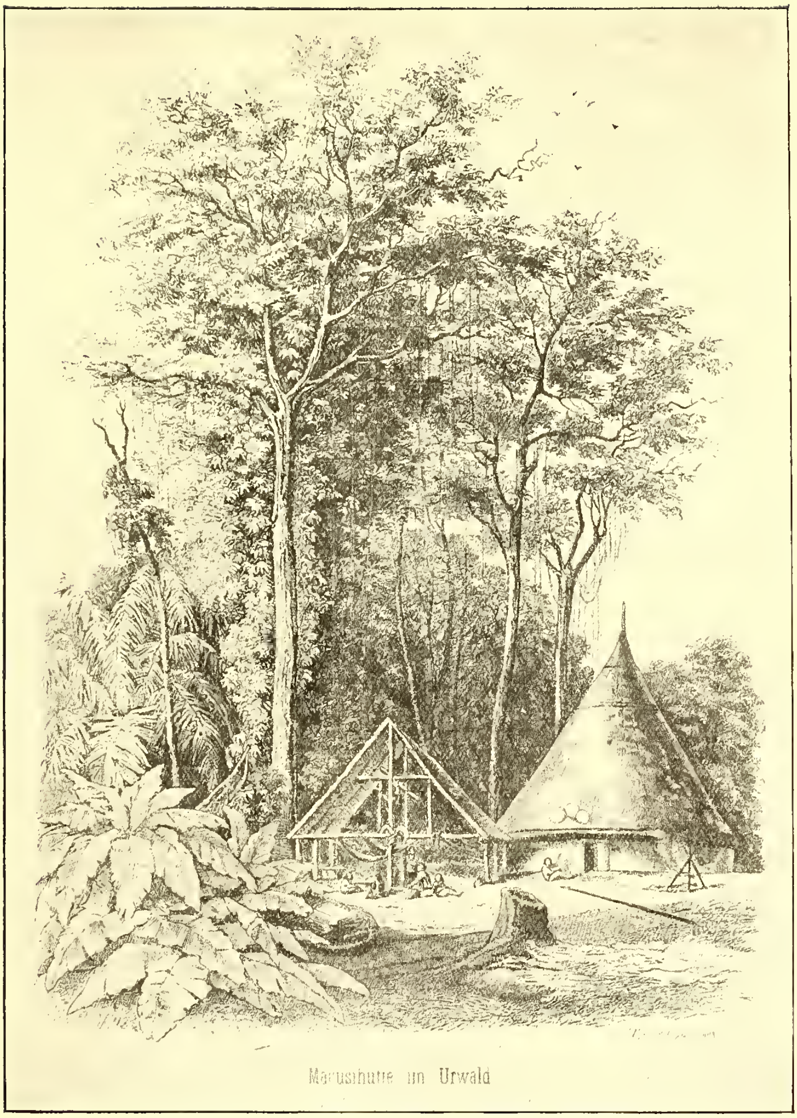
918. After these more general remarks let me turn once more to my particular surroundings. At Nappi I had hit upon an especially favourable field for collecting, and was soon in possession of a considerable number of birds, but the *Rupicola aurantia* and the *Chasmarhynchus carunculatus* were yet always wanting: I still had to search for the former in its haunts in the very mountain itself, but this I almost missed doing, because none of the villagers of Nappi wanted to escort me on account of its being the home of the worst of the evil spirits. My promises finally prevailed upon five of them to accompany me on this hazardous enterprise: I got away with them one morning as quickly as possible. The unusually large amount of dew that had fallen during the night gave me an opportunity of learning its signification on the part of the Macusis: the latter call it Star-spittle (Siriko-itaku), while the Caribs designate it as Star-urine. The thick virgin forest in the immediate environs of Nappi consisted for the most part of resin-producing trees, amongst which I will only mention the *Humirium floribundum* Mart., the *Amyris ambrosiaca* Linn., and *Hymenaea Courbaril* Linn. The *Hymenaea* looks uncommonly like our elm. Another extremely interesting tree, on account of its exquisite timber, *Piratinera guianensis* Aubl. (*Brosimum Aubleti* Poep. Endl.), the local letter-wood. I had got acquainted with already on the previous trips. The heart of this tree belongs indisputably to the most excellent cabinet woods, not only on account of its solidity, fineness, and power of taking a polish, but particularly also on account of its dark red colour and the deep black spots. It is a pity that the heart, even in a fully grown tree, has but a diameter of from five to seven inches. The *Sideroxylon inerme*, likewise indigenous here, offers a similar timber.

919. Only owing to the beds of certain torrents being devoid of water was it possible for us in several places to make headway in the vegetation that was so bound up and entangld with thick growths of bush-rope. Certain trees were overrun with a complete network, whilst others seemed covered with mosses, lichens, ferns and orchids, and several species of *Bignoniae* and *Passiflorae* entwined themselves up them like lovely branches of ivy. Though I now and again heard the enchanting note of the *Chasmarhynchus*, my eyes nevertheless in vain sought for it in this dense foliage.

920. After continuing on our way for a time with the help of these by-paths, and shooting several hokko hens and a beautiful species of *Picus*, the pecking of which continually resounded through the forest, the latter itself became clearer. We found ourselves apparently in an abandoned provision field now run wild, upon which a ruined house still remained. Its former owner, Pureka, was one of the men who accompanied me. Upon this neglected piece of ground, the *Musa sapientium*

---

* The symptom of "constant inclination to sleep" is puzzling. Of course sleeping sickness would not run so acute a course, nor would one expect violent dysentery, etc. Probably dullness leading to coma is meant, in which case the reference might be to sub-tertian Malaria, with gastro-intestinal or cerebral symptoms, or perhaps to Acute Dysentery. (F.G.R.)


Macusihütte im Urwald

MACUSI HOUSES IN THE VIRGIN FOREST.

had reached a height of 40 feet, and its trunk a diameter of 14 inches. The average height of the sugar-cane amounted to between 15 and 18 feet. In this respect the richness of the soil here surpassed anything I had ever seen before: the latter consisted of a mixture of humus, loam and sand. The occurrence of a painful death had induced the former proprietor to abandon his house and the rich fields surrounding it. The area that was not yet quite overgrown again at least afforded me some sort of an outlook: we found ourselves at the base of the Range which, after making a very hurtful passage for ourselves through the prickly *Solaneae* and *Mimosae,* we commenced to ascend: this, however, could only be accomplished by the continual help of the cutlass. The higher we climbed the more abundant became the *Desmoncus polyacanthus* and *macroacanthos* palms that proved so dangerous to my clothes and body: their merciless hooks often forced me to make a stop, when certainly many a piece of cloth, and many a bit of skin remained behind. The *Acrocomia sclerocarpa* Mart. and *Iriartea ventricosa* Mart. also presented obstacles just as frequent. Four years previously two of my companions had led Mr. Youd to the top, and we had hardly clambered many hundred feet before they drew my attention to the twigs that had been broken down and lopped with a knife on that very occasion, indications that would certainly have escaped notice by my untrained and bleary eyes. Twigs were now again freshly cracked at every ten to twelve paces. The immense granite boulders, which appeared partly as a rocky massif (*Massengebirge*) and partly as separate units heaped one on top of the other, were soon to be associated with the obstacles offered by the vegetation.

921. We might have been climbing like this for about an hour when my strength began to fail: the enchanting chime of the *Chasmarhynchus,* the object of my search was heard a short distance off and the sharp eyes of the Indians soon discovered the fairy songster on the top of an old dead mora. After much trouble on account of the dazzling sunshine, I also succeeded in distinguishing the white bird. I signified my companions to shoot all together so that the bird might be hit by perhaps one of the shots: a negative shake of the head was the reply, for they recognised only too well that such an attempt from our present standpoint would be useless, and nothing is more detestable to an Indian than to shoot at random. Nevertheless, deficient as I was, not only in Indian common sense but also in deliberation, I attempted the shot: the satirical laughter of my friends was the only result when they saw the bird fly away. Annoyed, I was about to proceed farther when they pointed to me to remain where I was, because the bird would soon return to its grand Bona-Vista. I hurriedly sought a more favourable spot, and had hardly settled in it than the notes were again heard. On this occasion the satirical laughter was on my side, for the shot hit and the bird came down, but the white plumage was, unfortunately, rather besmirched with blood. The bird is somewhat larger than a thrush: at the root of the beak there rises a peculiar, but at the same time hollow, black, muscular pouch (*zipfel*) that is in direct communication with the palate, and is decked with a few small white

feathers. According to its own sweet will, the bird can fill this pouch with air from the palate, whereupon it rises like a horn: just as voluntarily it can draw the air out again, when the bag hangs over the side of the beak, like the so-called nose of the turkey, or else it can retract it altogether, when it protrudes hardly more than a quarter of an inch. It is in this retracted condition that the bird usually carries its pouch, but when it wants to ring out its metallic notes it blows it up, with the result that the tip of the bag becomes twisted around its own base: if it strikes but a single note, the bag is immediately straightened up, to collapse directly it is over, and erect itself again with the next cry.* In the colour of the plumage the female differs completely from the male, because the former is greyish green. The males get their snow-white plumage only in their third year: I was subsequently fortunate enough to include in my collections the most varied stages of transition. It is remarkable that the Indians know neither the nest nor the breeding-season of the bird. They generally maintain that the bird does not breed here, but only appears in the environs of Nappi at this season of the year.

922. The higher we climbed, the rarer became the feathered occupants of the forest: the deep silence was only interrupted by the shrill singing of the *Cicadae*. We might thus have reached a height of about 1,000 feet when my companions, on coming to a small flat spot free from brushwood, no longer rightly knew in which direction we had to go, particularly as the vault of dense foliage, above and beside us, prevented them taking their bearings. To remove this uncertainty one of them had to climb one of the highest trees. We found ourselves in the neighbourhood of Curassawaka Rock, which we reached after a short rest. The composition of the rock itself, like that of those others which I had hitherto seen continually present, consisted for the most part of granite and gneiss with more or less mica. Upon the little platform that we were now occupying *Pitcairniae*, *Tillandsiae* and *Monachanthus* waxed in wanton fullness, while the panorama that spread out before me from this small plot of ground will always remain in my memory. Far below us the smoke clouds curling up through the thick masses of foliage betrayed the situation of the friendly village of Nappi, and my eyes swept without hindrance over the thick virgin forest, the innumerable savannah oases, and the soothing rolling downs as far as the horizon where they became blurred in the distant blue. The Curassawaka, with three of its sides fairly perpendicular, rose about half way up the range above the surrounding timber. Somewhat to the south of our standpoint and still a few hundred feet higher, the fantastic looking Nappi crag with its likewise perpendicular walls towered high beyond the crest of the range. At this elevation my Indians found a large land tortoise (*Testudo tabulata* Walb). How much time must this creature have taken to reach such a height?

923. After surveying the glorious prospect with rapturous gaze, we continued our journey which now led down a steep slope. The vegetation

---

* In *Timehri* N.S. vi. p. 164 Quelch says that the spiral tube or caruncle does not become inflated with air and is never carried in the erect position. (Ed.)

assumed another character: luxuriant ferns and thick clusters of *Gesneriae* covered the huge rocky boulders and increased the difficulties of descent still more, until we got to a deep ravine where we heard the pleasant splashing of a small torrent, in the cooling waters of which we refreshed ourselves to the full; but my eyes sought the *Rupicola* in vain. When we had again climbed, under inexpressible difficulties, an uncommonly steep hill covered with innumerable granite boulders, we at last came upon a small spot where the ground was fairly level and only slightly covered with bush, I sat down here to rest while the Indians distributed themselves in the brushwood, when a peculiar cry that I put down to a quadruped, because it quite resembled the voice of a young cat, suddenly attracted my attention. The notes continued getting nearer and nearer at short intervals, the Indians deceptively imitating them the while, and all of a sudden one of the longed-for birds unexpectedly perched on the bush in front of me: it was soon joined in a snipe-like flight by several others, which disappeared again just as quickly after searching the underwood in vain for the decoy. The hunter must utilise this short interval in which to shoot, because it is really the only moment when one might be successful. We had the luck to kill seven. The dirty grey plumage of the female contrasts strikingly with the brilliant orange colour of the male, which latter, however, is only attained in the third year. It is peculiar that the *Rupicola* carefully avoids the company of all other birds, and, accordingly, is only met in the most lonesome and wildest clumps of crag. The bird builds its nest in the deep fissures of the rocks to which it is stuck after the style of our swallows' nests and at the same time protected as much as possible from the influence of the weather. They use a fairly sticky resin for binding and fastening the materials to the rocks and for the vegetable threads and root fibres of which it consists. Like several other birds the *Rupicola* seems to use its nest when once built, every year again, and only to raise it at each breeding season by means of a new layer of rootlets and some feather-down: at all events this is what I concluded from the different strata lying one above the other. The outside is regularly plastered with that resinous material. They always lay but two eggs, white and sprinkled with a few black dots, which in colouring correspond exactly with that of species of *Pipra*: the eggs themselves are somewhat larger than a pigeon's. In such clefts one generally finds several nests beside and above one another, which furnishes a sure sign of their mutually peaceful disposition. The main breeding season appears to take place in the month of May, although I found quite young birds amongst the Indians in November: the latter seemed keen on rearing them. Dom Pedro I., Emporor of Brazil, used formerly to wear on special gala day a cloak made of variegated patches, as large as one's palm, from the breast of the toucan: the present Emperor wears one out of the skins of the *Rupicola aurantia*, now that the bird and its haunts are better known, and the districts on the Rio Negro, especially on the River Uaupes, have to deliver annually at Rio Janeiro a fixed number of these skins.

924. Extremely tired and exhausted, we got back at nightfall to the settlement, upon the return to which I could not sufficiently admire the acumen of the Indians for finding the village in amidst this awful wilderness, we having struck quite another route on the home journey. On unpacking my treasures gathered on this excursion I missed the small geological collection and upon enquiring for them from the Indian to whom they had been entrusted, he maintained, however impossible it was, that he had lost them.

925. My brother had already drawn my attention to the fact that the Indians can be prevailed upon to carry stones only with extreme difficulty, and generally get rid of them surreptitiously as soon as the opportunity offers. One can overload the Indian with baggage of all descriptions and he will quietly carry it without a murmur, over mountain and dale—but to load him up with stones, that he considers can only arise from malice: I was subsequently forced, if I wanted to add to my geological collections, usually to carry the specimens myself. On returning from my excursion to the village laden with plants, etc., I was every time greeted with the compassionate laughter of the women: but this was increased to the utmost when they saw me pulling stones out of my pockets: in short, from their point of view I was and remained the most extraordinary and curious creature they had ever seen.

926. The forest streams in the neighbourhood of Nappi must harbour a huge quantity of fish because often a single family brought home more than a thousand specimens of *Erythrinus unitaeniatus*, which they had caught in a short while by poisoning the water. It was surprising to me that all the catch consisted of this particular fish, the favourite resort of which must at all events be these forest rivulets whereby, during the rainy season, it may be brought into the flooded savannahs. The settlement, as soon as such a wealth of supplies was brought in, offered an unusually lively picture, because now was the time to save the huge catch as quickly as possible from getting spoilt. All hands were occupied: yonder several set up and bound together a boucan, while some ran to fetch dried wood for the fire, and others again cut the bigger fish to pieces so that they could be smoked through and through all the better, or else put them in large pots over the fire. The names of the different fish were generally taken from some sort of resemblance which some portion of it had with another animal. To my great astonishment and our greater joy, I had accidentally discovered in the virgin forest immediately bordering on Nappi several citron and lemon trees of immense size, the branches of which were completely bent under the weight of their fruit in all stages of development: some industrious Indian or other must have planted them there. This article of luxury, which we used as vinegar, made our fish dishes doubly tasty, and as I knew, moreover, with what delight this glorious find would be hailed in Pirara, I had already despatched to our friends there on the day of discovery several baskets of the fruit, for which on my return I received everybody's thanks. From then on, hardly a week passed but the Indians did not bring this much-prized article of trade to market.

927. I possessed the *Chasmarhynchus* and *Rupicola*: I only wanted now the *Strychnos toxifera* which, according to the statement of the Indians, is said to grow only upon Ilamikipang, one of the rocky heights on the western spur of the Canuku Range. My guides to Nappi also wanted to accompany me there. As this trip would occupy several days, I left Stöckle behind with my collections. On the evening before leaving, one of the Indians killed a fox (*Canis Azarae*) which had let its penchant for the numbers of tame parrots and hens far exceed its discretion. Judging from the carcase it is somewhat smaller than our fox, the brush appearing not so hairy by far: but it differs mostly in colour. Azara and Prince von Neuwied have already accurately described the beast which, accordingly, seems to be spread all over South America.

928. At sunrise we made a start. After we had crossed the little Curassawaka stream, we turned to the south-west and intersected the dense virgin forest that repeatedly varied in the character of its vegetation. Irregularly heaped boulder-rubble, in amongst which huge granite needles often made their appearance, now showed me that our route must just at present be running along the base of the mountain system. The thickly interwoven branches and twigs also refused every sunbeam a passage, which it only found where the storm had thrown down one of the huge giants, together with all its neighbours joined to it by bush-rope, and thus cleared away an immense space. In such situations the warming sunbeams had called forth an immense quantity of legume-like growths and other plants. The deeper swampy spots were generally occupied with palms; *Oenocarpus Bacaba* and *O. Bataua* grew up in company with *Maximiliana Regia* and luxuriant *Aroideae*, amongst which I was particularly struck by a *Dracontium* on account of the curious pattern of its leaf stalk, wherein it quite resembled the terrible snake *Trigonocephalus atrox*. As several specimens reached Berlin alive, it was shown by the blossoms in the Botanical Gardens to be a new species which Professor Kunth named *Dracontium dubium*. The plant proved of still further interest, in that I found the belief generally spread that the squashed leaf stalk and root, when laid on the bite caused by that snake, is an excellent antidote against its effects, a property Nature had wanted as it were to indicate to man in its conformation. Between the thick foliage of the trees and large leafy fringe that had shot out from the mould of fallen leaves in between the rubble and was swarming with innumerable flies and insects, we had thus covered a distance of several hours, when the sudden clearing and the beaten paths that several times crossed one another let us presume the proximity of a settlement, which soon came into view ahead as four miserable houses situate on a hill devoid of forest. In vain, however, did we look around for a living being,—yes, even the husky yelping of the dogs, which otherwise make their presence known on the slightest noise, was not to be heard: the village must be abandoned.

929. Though the Indian is anything but intimately attached to the soil which he happens to occupy, and where perhaps he was born, quite a trifling cause often induces him to pack up his hunting-kit as well as all his other belongings and seek some other place of residence,

but so long as the fruits of his field are not harvested he will only shift his quarters if the circumstances seem to him to be very urgent. It must accordingly have been some such cogent reason that had induced the late owners to abandon their fields when in so flourishing a condition and take their departure. As we wanted a few hours' rest, the Indians scattered off into the extensive field surrounding the hill and soon returned loaded up with sugar-cane, pine-apples, bananas, and tobacco-leaves: in the meantime the large ripe fruit-stalks of the *Anacardium occidentale* offered new refreshment, while the *Gomphrena globosa* around the houses reminded me of my home, until the glorious outlook onto the mountain chain recalled me to my surroundings. Like a thick green mat the tightly entangled forest stretched away to the summit of the mountain system, to be only occasionally interrupted by mighty sombre granite crags and rocky walls either rounded off or running out into pointed needles, whereby the abundant quantity of mica, which had been heaped in certain situations into regular layers, reflected the glowing sunbeams in thousands upon thousands of rays of dazzling brightness. I had already come across this phenomenon on an intensive scale at Pirara in connection with the Pacaraima Range, when it generally surprised us considering that this lay a six hours' journey from the village. Might not this abundance of mica with its reflected light prove to be one of the causes of the origin of the myth of El Dorado, particularly since mica, as we learnt by experience, is considered by the Indians to be the sought-for gold. It was an uncommonly agreeable little spot and even my Indians expressed astonishment at the owners having abandoned the pretty place: what was most surprising to them was that they, their nearest neighbours, had heard nothing about their removal. The cause of the residents' flight remained a puzzle, though my hurried escape from the dangerous proximity was easily explained, because the houses were regularly filled with fleas which may have scented the long-missed presence of living beings. As the universally distributed tormentors are rarely able to live longer than a few weeks in houses abandoned by their occupants, these could only have been empty for a short while.

929 (a). After satisfying our hunger and quenching our thirst, we trod the forest again and continued on our way, during the course of which I was particularly appalled by the unusual silence that prevailed. Here and there a *Pipra* or a lonely pigeon—these were the only creatures that I saw. We had been travelling thus for a long time through the voiceless and noiseless forest when a deep roar and growl from an interlaced thicket of *Desmoncus*, *Astrocaryum* and *Bactris* attracted our attention. The unanimously hushed exclamation "Teikusi" of the Indians solved my doubts: we stood in front of a jaguar's lair. As our weapons were only loaded with coarse shot we added a few slugs as quickly as possible, and divided ourselves around the spot whence the sound proceeded. Slowly and deliberately, just like the cat that we now wanted to sneak upon, we drew nearer the thicket and there soon shone at us from between the palms the brilliantly spotted skin of a jaguar: nevertheless we had been noticed already; it

glared at us with its sparkling eyes and at short intervals with a hissing sound; it opened its jaws wide so that its frightful set of teeth got to be seen. Confused and awed I gazed at the royal creature that I here saw for the first time in a state of nature, and at the moment when I hoped to hear the shot of the Indian who was closest to it I noted but the light snap of the percussion cap, when with a mighty spring the creature disappeared into the underwood. Angered and disgusted, the Indian threw his weapon on the ground: about 20 paces ahead of him, the jaguar had just consumed an aguti. We had loaded the guns in the morning, but none of us had had an opportunity of firing them off, and the damp atmosphere had long ago wetted the load. Vexed and out of humour, we resumed our journey until we reached a savannah that was occupied with *Curatella* trees, bushes, and whole stretches of *Cissampelos.*

930. The fantastic mountain range, the base of which we followed, now lay before us in all its full height and broad extent. Wide belts of rock, upon which grew Agaves, Orchids and low bushes of Clusia, and Byrsonima, intersected the plain in its neighbourhood from East to West. At one large house that was just being built the same thing happened as at the last village: we found the occupants likewise away. After climbing some more of these rocky ridges a house again bobbed up ahead, where we found a young woman lying in her hammock spinning cotton, with a pretty little girl sitting at her feet and picking the material: she ran screaming into the arms of her mother who was also frightened at my entrance. When both had finally recovered from their fright, the woman at our earnest request brought us some fresh water wherewith we greedily quenched our burning thirst. While I was yet admiring the neat battle-weapons and hunting implements of the husband, he himself stepped into the house laden with large fruit-tufts of *Maximiliana regia* and was not a little surprised at my presence. He threw down his load, gave us a cordial welcome and told his still anxious wife to get out some bread, dried fish and a drink of paiwari, upon which we set to work with a will. In the meanwhile we were being watched by our host, who without saying another word after giving the order, had immediately thrown himself into his hammock: however, before my companions had satisfied their hunger, curiosity had torn down the bars of etiquette, and question upon question crowded itself upon his lips. As it was now fairly late we made up our minds to spend the night here.

931. In the morning, after following the small path that at first continued to lead over undulating ground and through forested patches where we always found the *Spondias* predominant, we crossed the Quariwaka, one of the heights of the Canuku Range, upon which was to be seen an immense granite rock with a large number of round masses of quartz embedded in it: these reflected the sunbeams just as strongly as did the slabs of mica. Although the savannah would have provided sufficient material for the mud walls, the occupants, likewise here had varied the practice peculiar to the Macusis, and built their houses entirely out of palm-fronds, which at all events makes their construction much

lighter, but certainly not so lasting. Since leaving Pirara I had not seen a house with mud walls.

932. After the children, yelling and screeching, had run into the houses and the adult residents had scrutinised me with curiosity and astonishment, the head of the settlement approached one of my men and addressed him with a short salutation formula, which, word for word, ran: "Sit thou down, sit thou safe and sound down." The person so addressed replied to the greeting with a plain "Wang," *i.e.*, "It is good." The chieftain thereupon turned to the next of my companions and went on greeting everyone in the same way. His two sons followed and after them, the remaining members of the settlement, who repeated the same formula. As for me who was excluded from it, their ceremony, lasting as it did for almost half an hour, was dull enough. But when the residents learnt from my men the object of my coming, an old Macusi offered to take me next morning up the Ilamikipang, as he had rendered the same service upwards of four years ago to my brother, whose personality he remembered down to the most minute particulars. The old man had an especial interest for me in that he had been described as one of the most celebrated poison-makers in the district, on which account I could be all the more certain of his knowing the habitat of all urari plants in the whole neighbourhood.

933. That the innumerable village dogs, momentarily silenced by infinite trouble on the part of the women, did not belong to the dumb variety was demonstrated clearly enough, because hardly did I let myself be seen than the whole pack started an uproar that I could only stand with difficulty. Except for the larger specimens, which judging from their whole build must have been of Spanish origin, the remainder belonged to a sharp-snouted small breed with long and dark hair. While I soon got on friendly terms with the former, I remained on a war-footing with the latter. The dog is to the Indian what his mare is to the Arab. In spite of the animals often resembling living skeletons, they stand next to their children in their affections, and as the most valuable prize of an Indian is a gun or an axe, he accordingly asks for one of these articles whenever anybody wants to trade with him for a dog. Fowls and dogs constitute the main items of the Indian's live-stock, but both were first introduced by the Spaniards. I have already mentioned the fact of the Indian eating neither fowls nor their eggs nor in general the flesh of imported animals except under circumstances of direst necessity: it might have come about on this account principally that the herds of wild cattle have increased so enormously. The piai is even forbidden to eat the flesh of introduced animals.

934. Shortly after my arrival a woman brought me a cup with a drink that indeed resembled chocolate, but did not at all taste like it. It was prepared from the ripe fruits of the Turu palm (*Oenocarpus Bataua* and *O. Bacaba*). The ripe blue fruits are boiled for this purpose, then thrown into a sort of mortar, where they are stirred round and round until the flesh loosens from off the stone, whereupon the latter are removed by means of a sifter, and the slimy mass thinned with water. The drink has such an insipid taste that it could not possibly

find an advocate in any European. While making these reflections I was startled by the wild screams of several children who up to now had been squatting at play in front of the entrance of the next house. Immediately above them a large snake was just creeping out of the thickly-thatched palm-frond roof, but an arrow, let fly by an Indian, prevented its escape into the savannah: it was the harmless and very beautifully marked Tiger-snake (*Coluber pantherinus* Daud.), the only specimen that I saw during the whole course of my journey.

935. Peeping into one of the remaining small houses that stood by itself apart, I was led to believe that it must be the laboratory of the poison-maker. Large pots, funnels made of husks of palm-blossom, roundly hollowed-out logs that probably served as mortars, heaps of dried bark and bundles of two to three foot long pieces of wood were all indications that my supposition was correct.

936. When the old poison-maker saw my "trade," he promised to boil the poison in my presence when we got back if I would give him some knives in return.

937. With earliest dawn we took our departure for Ilamikipang. After crossing the one-hour wide dense forest border stretching from the base of the mountain into the savannah, we reached the forest itself. This consisted for the most part of palms, *Musaceae, Zingiberaceae, Aroideae,* ferns and razor-grasses. Here also the guide showed me still on the bushes the spots where he had lopped the twigs off with his knife when accompanying my brother on the ascent of the mountain five years before.

938. The rocky bed of a small torrent was our path: another would have been impossible, because the confusion of rock and rubble was such as if they seemed to have made a regular home for themselves. Boulder towered on top of boulder, the one always greater and more massive than the other: indeed, some which we ourselves had to get round in the river bed were at least 50 feet high.

939. These rocks unexpectedly presented quite a pleasing prospect because a number of glorious sun-birds (*Eurypyga Helias*), which had chosen them as hunting grounds for flies and other insects, were to be seen coquettishly strutting about, while the little torrent was now lightly rippling on its way, and now again gushing in wild delight over the smaller or larger boulders as it hurried down to the more tranquil plain. It almost babbled over the smooth level of the granite slab on which we stood, then suddenly vanished and just as quickly sparkled out again in places where it was least expected. These innumerable cascades and miniature waterfalls, this everlasting rippling, swishing and splashing of the falling waters, enhanced the weirdness of the scenery to such a degree that the difficulties of the climb, every step of which proved a source of danger owing to the slippery surface to be traversed, remained quite unnoticed by me. But with what ease and how nimbly did my companions surmount these obstacles! They climbed the boulders as if their feet stepped on stairs. I often had to stop in surprise for, on seeing my companions disappear with such rapidity behind and between the rocks, and emerge again just as suddenly on their tops, I could not but believe that mountain-sprites were disporting

themselves in this chaos of rocky rubble: and yet they only had one hand free, the other holding a gun. In most cases they had enjoyed half-an-hour's rest by the time I caught up with them, or else they waited at some larger boulder to hand me from the top a pole by which to drag me up. The stone consisted partly of granite, partly of gneiss with and without rather abundant layers of mica, and almost generally had many garnets imbedded in it. Now and then a rubble of weathered mica-schist put in an appearance. The vegetation that had developed upon the steep slopes and upon the huge boulders of gneiss was as fairy-like as the rocky chaos was fantastic. Creepers crept over the blocks like snakes in a number of coils, or, robbed of every point of support, hung over the deep ravine of the river-bed. On the isolated projecting pinnacles, wherever a little earth had collected, ferns, *Myrtaceae* and *Clusiae* and various orchids as *Pleurothallis, Brassavola* and *Tillandsia* were to be seen sprouting: forest giants bent their dark leafy vaults over the walls of the summit. When we had climbed about 600 feet my guide pointed out the first plant with the exclamation "Urari-yeh, Urari-yeh"†: it rose up from under a thick heap of rubble. With a certain amount of dread I regarded this mischief-making plant, the rapidly acting properties of which I had now so frequently seen, and still was so often to see again, and for which an antidote had so far not been discovered. Even its external conformation had something suspicious about it: the brown hairy young twigs and leaves, the rough dark-coloured bark of the older shoots, everything betrayed its awful properties. My eyes sought in vain for a blossom, but they did not even find a fruit. As this seemed to be a young plant, I comforted myself with the hope that perhaps among older specimens I would discover one or the other: yet even this hope remained unfulfilled, for after we had climbed some 100 feet higher I found indeed quite aged plants with trunks as thick as one's arm and with many a twist, but neither flowers nor fruit. The flower must in general be very small and simple because my Indians, who search for the plant at all seasons of the year, said that it does not bloom at all. The Macusi Indians knew of only three spots where this species of *Strychnos* is found in the Canuku Ranges. One is Ilamikipang, the second is where the Rupununi breaks its way through the range, some two days' journey from Aripai, a Wapisiana settlement: the third one I am not intimately acquainted with. On my subsequent travels I was fortunate enough to find the plant in blossom in two hitherto unknown localities, localities where I would have least expected them, the banks of the Pomeroon and its tributary, the Sururu. The banks of both streams belong to the area occupied by the Caribs, but as these are ignorant of the preparation of the poison, it is probable that they also do not know the dangerous properties of the plant.

---

†—I must mention here that the Indians do not call the poison Wurali but Urari. Walter Raleigh already quoted the name Ourari, and it is this name that is exclusively applied to it by the tribes of British Guiana. The Macusis, the most excellent poison-preparers, call it Urari, the same term that it bears among the Tarumas, Wapisianas, Arekunas, Woyawais Atorais and Akawais. The fact of the Caribs sounding the letter r almost like an l seems to be the reason for the adoption of the name Wurali now and again. Von Martius also states that during his travels on the Amazon, Rio Negro and Yupura, he only heard the poison called Urari and never Wurali as in Surinam: (Travels in Brazil, by Spix and Martius, Vol. III p. 1155.

940. In what way did the Indians learn the properties of this plant, how did they discover it in the midst of these wildernesses? These questions press themselves on the botanist all the more in that a number of species of *Strychnos* are present in the forest oases of the savannah, even in the immediate neighbourhood of their settlements, and yet are not utilised by them. Before continuing our journey farther, we cut a number of 3 to 4 feet long pieces, mostly from the trunk and woody twigs of the specimens that showed by their young shoots they were full of sap: we proposed preparing the poison with them on the following day.

941. The higher we climbed the more difficult became the track and the oftener were we obliged to take a rest: while thus engaged we suddenly heard the well-known note of the Cock-of-the-rock at not too great a distance. My companions immediately sneaked with their weapons in its direction, when soon after one of them returned and told me to follow him carefully and lightly. We might have crept some thousand paces through the bush on hands and knees when my curiosity that had been aroused was satisfied, and on crouching down quietly beside the other Indians I witnessed a most interesting sight. On the smooth surface of a rocky crag a party of the beautiful birds were keeping up a dance: a performance that has been doubted by many ornithologists though not only my brother, but many of the Indians had already told me plenty concerning it. While about a score of birds, perched upon the bushes surrounding the play-ground, were uttering the most peculiar notes, and apparently constituting an admiring audience, one of the males was cutting capers on the smooth boulder: in proud consciousness of self it cocked and dropped its outspread tail and flapped its likewise expanded wings, and thus continued to figure out the steps until it seemed to be exhaused, when it flew back on to the bush and its place was taken by anoher male. The females in the meantime uttered a peculiar note, watched unweariedly and on the return of the tired performer uttered a scream denoting applause. The shot of one of the Indians, whom I had been unable to prevent, dispersed the merry party, which left four of their partners wounded on the ground. The bird appears to be of an especially delicate nature because the slightest injury kills it, which also is the case if just the wing-bones are broken by the shot. In the crop were found only fruits, especilly hard berries of the size of a maize corn which belonged to some palm.

942. As the Indians set high store upon the birds' feathers they particularly keep a look-out for its play-grounds, which are regularly established, and wait here with their blow-guns for the performers to put in an appearance: once the ball is opened the birds are so absorbed with their sport that the hunters can shoot down several of the spectators perched around.

943. After this interesting interlude we renewed our journey over the irregular confusion of heaped-up rubble and across whole stretches of uprooted trees, which clearly indicated that frightful storms must often rage on these heights. In some places these decaying giants

towered over one another to such an extent that we could not climb them at all but had to make immense circuits round them. Huge specimens of the *Cryptocarya pretiosa* Mart. (*Mespilodaphne pretiosa* Nees.), *Amapaima* of the Macusis, *Casca pretiosa* of the Brazilians, were met with: its aromatic cinnamon-smelling bark, of which the Indians employ a decoction for dysentery, diarrheoa and similar affections, contains an uncommonly copious amount of ethereal oil. *Tillandsiae* and orchids covered the giant trees, which in the damp atmosphere were rapidly going to absolute ruin. It was only with the greatest effort after the failure of many an attempt to force our way up, that by a very great effort we at last reached the summit of Ilamikipang, which ran out into a small platform covered with a most flourishing growth of *Pitcairniae, Tillandsiae* and a dainty grass. But the reward that offered itself for my troubles was rich and ample. I must have been standing some 2,500 feet above the savannah which, with its dun yellow covering, showed infinitely more extensive than from the Curassawaka. It was the highest point of the mountain range, the loftiest spot I had hitherto climbed in Guiana. While my vision in a southerly direction swept unchecked over the broad savannahs of the Rio Branco, it dwelt in the North-East upon the Makarapang Range which, rising in the bluish mist, merged into one and the same contour along with the northern slope of the Canuku. To the northward, the bleak Pacaraima Range raised its gloomy head, and towards the North-West some mountain tops, scattered here and there over the savannah, closed in the view: in the South-West the glorious panorama was limited by Mounts Zemai, Pasimang and Yackariwuiburi, the western spurs of the Canuku Range. But at my feet there reposed a regular waving sea of verdant tree tops out of which, like rocky crags upon an ocean, there merged huge isolated shattered masses of granite. Thick clouds of smoke in scattered situations on the savannah shewed where the Indian Nimrods had been setting fire to the dry grass, while other smoke columns, curling up in between the thickly enclosed tops of the forest massif and savannah oases leading to the base of the range, indicated the peaceful settlements and homes of the sparse populace. Here and there one could still distinguish in certain spots the herds of wild cattle grazing in the savannah down below, as well as the snow-white plumage of the herons and storks which must have gathered in huge swarms on isolated swamps to encircle them as with a white fringe. The most profound rest and quiet reigned at this height, which was only now and again interrupted by the rustling of the foliage set in motion by a breath of wind. Not a bird was to be heard, the carrion crow alone circling around the rocks in unruffled and stately flight. It was with an effort that I had to tear myeslf away from this enchanting picture, and although I had already retraced my steps a few times, my tardy feet still hankered after the little platform, until my gaze once more glided into the ghastly depth. On the northern side the cliff formed a perpendicular abyss several hundred feet deep, out of which the dark tree tops hardly rose to a quarter of its height: the mere thought of a false step, of a plunge into the gulf was enough to make one shudder.

944. Though the ascent of this scene of devastation and seat of intensive volcanic disturbance was dangerous, the perils were increased still further during the descent, in the course of which we were at last forced to abandon the ravine, and clear a road for ourselves through the wild underwood: we reached the settlement at sundown exhausted and fatigued after our indescribable troubles and covered with innumerable cuts, during the receipt of which every plant had claimed a share of my clothing. I found comforting refreshment after all this exertion in the small but finger-long fruits of a banana brought me by the Indians. Though I was so tired and my swollen feet smarted so painfully, curiosity to know the species which bore this hitherto unknown fruit left me no peace: I still had to go to the provision field. The plant was as dwarfed as the fruit which did not reach a height even of four feet: I took it for a variety of *Musa chinensis* Sweet. (*Musa Cavendishii* Paxton), which it exactly resembles in shape, its habitat alone probably hindering the luxuriance that it develops on the coast.

945. Before I pass on to a description of the poison itself I may be allowed to include here the experiences of my brother, who discovered the chief ingredient of this vegetable poison.

946. The celebrated and unfortunate Walter Raleigh was the first to bring to Europe accurate information of the existence of a frightful and rapidly-acting extract called "Ourari," which the aborigines of the Orinoco and Rio Negro used for the poisoning of their fighting and hunting arrows. Although, since receipt of the first news, a sort of general attention had been paid to the subject, it is only within recent times, as shown by the many mysterious accounts concerning the ingredients and manufacture of the poison, that one has succeeded in sifting the true from the false. The accounts of the older travellers and missionaries, like Hartzinck, Gumilla, Gili and others, rival one another in fabulous and mysterious particulars. The first one even states that in order to try the strength and rapid working of the prepared poison, the Indians shoot an arrow streaked with it into a young tree, and if the tree dies within three days, the poison has the strength required: fables of this nature need not be further discussed.

947. At the beginning of the nineteenth century, Alexander von Humboldt was the first to give an authentic account of the preparation of this terribly effective poison which he had witnessed in Esmeralda†. Later travellers naturally found the process mentioned by him there far too simple and sought afresh to veil the preparation of the poison in mystery: it was maintained that the vegetable extract was only the medium of the deadly material, and that the Urari received its life-destroying powers only through the addition of the teeth of the most venomous snakes, such as *Trigonocephalus, Crotalus*, etc., together with dangerous ants such as *Ponera* and *Cryptocerus,* as well as from *Capsicums*, etc. None of these individuals, however, could have witnessed its preparation and seen the addition of these ingredients: their information is always supported only by the accounts of the

---

†—Voyages aux Regions Equinoxiales. Tome VIII page 153.

Indians, who naturally take care to keep the manufacture of the poison as dark as they possibly can.

948. It was on account of these varying reports that my brother felt induced to devote his utmost attention to the subject on his first expedition to the interior of British Guiana. He was fortunate enough to see a portion of his wish realised already on the upper Rupununi, for he at least got to know botanically the dangerous plant that supplies the chief ingredient for the Urari. In the Wapisiana settlement of Aripai on the Rupununi, in 3° Lat. North, he was informed that the plant grew on the Canuku Ranges not a day and a half distant from the village, and in company with some Indians left for the spot indicated. After a very difficult march they reached at Mount Mamesna a Wapisiana settlement where they spent the night and, besides that, found to his great joy, a resident who not only knew accurately the habitat of the plant, but also understood the manufacture of its poison. The latter expressed his willingness to fetch him out branches and bark of the same in sufficient quantity, but declined to take my brother to where the plants grew: it was only by means of many a gift that he could be finally prevailed upon to act as guide. On the following morning they took their departure and after many difficulties, for the way led through a rocky terrain, discovered the first plant. Although this showed neither flowers nor fruit, my brother recognised in it a species of *Strychnos* which he named *Strychnos toxifera*.† Nevertheless the Indian could not be induced by any manner of means to manufacture the poison in his presence and so my brother had to content himself with the accounts given him of its preparation. It was to be expected that the many mysterious details of the earlier travellers in British Guiana, of Waterton for example, were too inrooted amongst the Colonists for them to believe the simple method of preparation with which my brother furnished them on his return. The certainty that only the vegetable extract of a plant gave rise to the terrible effects was doubted, these being ascribed to the poison-fangs of snakes, to ants, and to peppers.

949. In 1837, during the second expedition which my brother undertook up the Essequibo, he found opportunity for again visiting the region of the Urari plant. During his stay in Pirara he learnt that in the neighbourhood of the Canuku Mountains there lived a Macusi Indian, who was recognised as the most celebrated Urari manufacturer of the whole tribe. He looked him up and by means of certain promises, succeeded in prevailing upon him to prepare the poison in his presence. In company with the poison maker he undertook beforehand an excursion to the western extremity of the Canuku range, where the plant was also said to grow, so as to obtain from there not only the material for the poison, but also perhaps to find the plant in flower: the Ilamikipang was the second habitat of the plant, about 18 miles in a south-easterly direction from the place where he saw it for the first time in 1835. Under the same difficulties with which I subsequently had to contend they also obtained the first plants; he indeed now again found the plant

---

†—See Robert Hermann Schomburgh's Reise in Guiana und am Orineko p.94.

without flowers, but yet supplied with some fruits that confirmed the conjecture that it was a species of *Strychnos*. After collecting the necessary Urari bark required, but only removing it from plants which were found in full sap, they returned to Pirara. The manufacture of the poison was again delayed a few days, for the poison maker maintained that he had to submit himself to a strict preparatory fast. During this interval a celebrated and influential Macusi chieftain, named Kanaima, from Rupununi appeared at Pirara and prevailed upon the poison maker to withdraw his promise to prepare the poison in my brother's presence. Although the individual energetically demanded the return of the collected bark, my brother refused to give delivery, but took it with him when the expedition changed its quarters from Pirara to Fort Sao Joaqnim. Here he started making researches on his own account with the bark of the *Strychnos toxifera* alone, and to extract poison from it. For this purpose about two pounds of bark was pounded up, put into a new pot and a gallon of water poured on top. It was left standing for 24 hours and half of the extract, that had taken on a brownish colour, emptied into another new vessel which was boiled over a moderate fire down to the consistency of syrup: during this process the still remaining original extract was gradually poured over it. Two fowls were wounded with this poison, one in the foot, the other in the neck, and though the effects were visible in the course of five minutes, the former died 27 minutes, and the latter 28 minutes after inoculation. This was a sure demonstration that the *Strychnos toxifera* alone, without any mixing of other ingredients, developed the deadly properties, and that all the other additions of the Indians did not contribute essentially to its strength. The boiling process was already completed in 7 hours, while that of the Indians requires often more than 48, on which account the extract would be considerably more concentrated, and the slower effects of the poison as prepared by my brother, explained. It had a light brownish tinge, while that of the Macusis showed a brown-black colour, which it probably receives from the other ingredients added to it by these people.

950. Though the vegetable poison is indigenous among several tribes of Indians between the Amazon stream and the Orinoco, its manufacture, as well as its remaining ingredients, nevertheless varies in every individual tribe. (This want of uniformity in its preparation is also the reason why its strength and time to take effect varies so much amongst the different people who make it. I have already stated that the presence of the hardiest plants of *Strychnos toxifera* is strictly limited to a few localities within the area of country occupied by the Macusis. This might well also be the reason why these are generally celebrated far and wide as the makers of the strongest poison. While the arrow poison of the tribes on the Rio Negro and Orinoco, which we obtained by accident, only took effect after hours, the death struggle with that of the Macusis occurred in as many minutes. This celebrated strength of the Macusi poison annually brings whole caravans of Indians from the Rio Negro, Orinoco, and even the Amazon stream,

to the Canuku Ranges to barter the urari prepared by its inhabitants for other articles.

951. Von Martius portrays the manufacture of the poison by the Juris, Passés, Tecunas, and other tribes on the Amazon and Yupura.† Poeppig describes it from Peru and Chili,* and Humboldt as made in Esmeralda on the Orinoco:‡ but all these tribes, according to the accounts given, utilise ingredients completely at variance with one another. On visiting Esmeralda in 1839 my brother found the mission that was in so flourishing a condition in Humboldt's day, occupied by but a single family: the old patriarch informed him that he bartered his arrow poison from the Indian tribes occupying the watershed of the Paramu and Ventuari, particularly from the Guinaus and Maiongkongs. Both these tribes whom my brother had already visited call their arrow poison Cumarawa and Makuri, but they preferred the Urari manufactured by the Macusis, on account of its more rapid effects, to their own. The articles of trade which the Arekunas, as already mentioned, receive from them for it are the well-known blow-guns or the bare stalks of *Arundinaria Schomburgkii.*

952. During his stay amongst these tribes my brother convinced himself that for the main ingredient of their poison they either used the bark of *Rouhamon guianensis* Aubl. (*Lasiostoma cirrhosa* Willd.) or *Strychnos cogens* Benth. But though their poison resembles Urari both as regards colour and consistency, it remains far behind it in strength, as I have already noted. When my brother showed the Guinaus and Maiongkongs some dried specimens of the *Strychnos toxifera* which happened to be in his herbarium, the plant seemed to be completely unknown to them, whilst they immediately recognised the examples of *Strychnos cogens* and *Rouhamon* and pointed out that these were the plants from out of which they manufactured their arrow poison.

953. In British Guiana also, the manufacture of the arrow poison is limited to only a few of the tribes. Von Martius, who says the same thing of the tribes of Brazil, gives as a reason that these same plants, which supply the chief ingredients of the deadly extract though found over a large area are not proportionately distributed, but are present in isolated places, for which reason the manufacture of the Urari is peculiar to certain tribes and hordes only. As far as the aborigines of Guiana are concerned, this statement cannot be valid because, as will be seen in the progress of my journey, not only is the *Strychnos toxifera* found on the Pomeroon but other species of *Strychnos* grow on the Barama and Waini, a territory occupied by Warraus, Caribs and Arawaks, who do not use arrow-poison and know nothing about the properties of the plant. In British Guiana it is only the tribes who use the blow-gun as a weapon that know and employ the arrow poison.

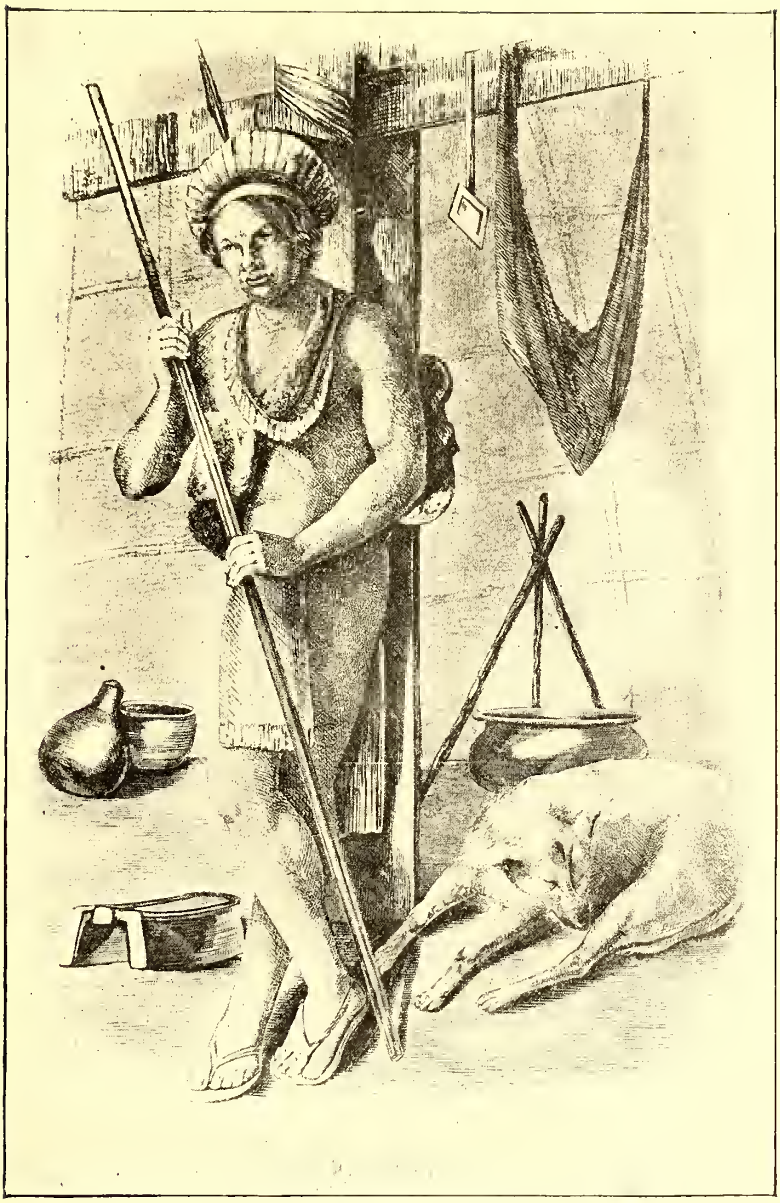
954. During his second stay at Pirara in 1837 my brother was just as unsuccessful in becoming witness to the manufacture of the article and

---

†—See Reise in Brasilien Vol. III p.1155.

*—Reise in Peru und Chili Vol. II p.456.

‡—Voyages aux Regions Equinoxiales Vol. VIII p.153.



PUREKA, THE MAKUSI.

accordingly, when leaving the village, commissioned Mr. Youd to induce the poison-maker of the Canuku Ranges to manufacture it in his presence, and then inform him of the process. Mr. Youd succeeded in getting this done in front of the door of the hut specially built for the purpose, where he could watch the process quite distinctly. On his third visit to Pirara in 1839, my brother was likewise present at its manufacture. The combined information of these two witnesses corresponds in almost every repect with that of mine, which may well have its reason in the fact that we watched its preparation by one and the same person.

955. Let me resume the thread of my story (Sec. 936). To my consternation, on reminding the old poison-maker next morning of his promise, he offered all sorts of excuses, complained of sickness and headache and wanted another few days' postponement. The wily Indian knew only too well from experience that such a specious refusal would considerably increase the payment, and I found myself forced, in order to gain my purpose, to add some powder and a few knives to the reward already promised.

956. At last I was about to have my lively wish fulfilled to see the actual making of the poison, about which so many a marvellous tale has been told, just as there is about anything else that is enveloped in a certain amount of mystery, when I found that, except for certain unessential ceremonies, it was as simple as it could possibly be.

957. The small house that I took for the chemist's laboratory immediately after my arrival, was indeed the Urari-house. The Indian now started to peel off the bark and sapwood (both portions are said to contain the poisonous substance to an extreme degree), and then fetched out the other ingredients that he seemed to have on hand, and divided them up in the quantities required. Unfortunately, I could not identify the three plants, the barks of which he added to the *Strychnos*: he called them Tarireng, Wokarimo, and Tararemu. To all appearances they also belonged to species of *Strychnos*, and upon my asking him where they came from, he gave me for answer "Far, far away in the Ranges. It takes four days to get there." The relative proportions of the complete ingredients, according to weight, might be the following:—

Bark and sapwood of Urari (*Strychnos toxifera*)	2 lbs.
Bark of Yakki (*Strychnos Schomburgkii.* Kl. *n.s.*)	¼ lb.
„ „ Arimaru (*Strychnos cogens* Benth.)	¼ „
Tarireng	¼ „
Wokarimo	¼ „
Root of Tarireng	½ oz.
„ „ Tararemu	½ „
Fleshy root of Muramu (*Cissus sp.?*)	
Four small wooden chips of Manuca.*	

---

*—Manuca is the strongly bitter wood of a tree of the family *Xanthoxyleae*. The bark and the wood is used on the Rio Negro, Amazon and Rio Branco as an effective remedy against syphilitic diseases. All the ingredients that the Macusis employ for the manufacture of the poison are uncommonly bitter.

958. On concluding these preparations, he went to his house and returned with a new clay pot that might hold about four quarts, and two other smaller, also quite new, shallow globular-shaped utensils, stepped into the urari laboratory, and put the vessels down. In the former the poison had to be boiled; in the latter it had to be exposed to the sun for thickening. The large strainer or funnel, made out of a palm-blossom envelope, was cleaned and fresh silk-grass through which to sift the fluid laid on it: the large hollowed-out block of wood that served as a mortar was likewise cleaned out, because the various ingredients had to be crushed in it. When the Indian had got everything accurately and orderly arranged, had built a fire-hearth of three stones and placed the wood for the fire, he again betook himself to a distance, in order, as my companions explained,—because up to now not a word had been exchanged between him and myself—to fetch the implements for lighting the fire, although a big one, which of course had been lighted by profane hands, was burning close by. Just as little dare water that has not been fetched from the stream in the pot, as well as any implement in general that has not been made by his own hands, or any assistance on the part of the residents, be requisitioned or used: every transgression of these hallowed laws will render the poison ineffective.

959. Besides the fleshy root of the Muramu, the different barks were now pounded somewhat in the mortar, but one at a time, the carefully stacked up wood lighted, and the Urari bark first of all thrown into the pot, filled with water, standing over the fire: as already stated there may be quite four quarts of water in it. As soon as its contents began to boil, the Indian, always at fixed intervals, threw in a handful of the remaining ingredients, except the Muramu root, on each occasion bending over the vessel and blowing forcibly into the mass, a procedure that was to contribute largely to the strength of the poison. While this was going on he only kept up so much fire as was necessary for a gentle boiling at the same time that he carefully skimmed the scum collecting on the surface, leaving it but momentarily during the next 24 hours, what time the fire was kept at a continuous even heat. As a result of this the extract had become tolerably thick, might have been boiled down to about a quart, and had at the same time assumed the colour of a strong decoction of coffee. The old chap now took the mass from off the fire and poured it into the strainer already mentioned: the extract trickled slowly down into one of the shallow vessels, the remaining portion being left behind in the silk-grass. After exposing the strained liquid about three hours to the full sunshine, he added to it the slimy expressed juice of the Muramu root (which had been previously soaked for a short while in the boiling poison and then squeezed out) when the poison immediately showed a striking change, by coagulating into a jelly-like mass. After this peculiar procedure, he poured it into yet flatter earthen vessels, which were exposed to the sun for still further thickening, namely, to a thick syrupy consistence. The poison was afterwards poured into the small calabashes or small half-globular earthen vessels specially manufactured for the purpose, where it then became

quite hard: these pots were tightly closed with palm leaves or small pieces of animal skin. The Urari was ready on the third day, when the contented manufacturer tried its strength in my presence, for which object he had caught several large lizards. He dipped the tip of a needle that he had received from me into the black syrupy mass, let the poison hanging on to it dry, stuck one of the lizards in a toe of the hind leg and let it run: in the course of nine minutes the peculiar appearances of the poisoning set in, and a minute later the lightly wounded creature was dead. A second and a third were stuck in the tail, where it gave practical proof of its efficacy within the same period. He had purposely chosen the lizards for experiment, because he maintained that the effects were apparent half as quick again with warm-blooded animals than with amphibians. A rat which a boy caught also confirmed the statement for it was dead in four minutes, a fowl that I had intended for my lunch already in three. Each of the latter animals was only almost imperceptibly wounded.

960. The old man assured me that the poison, if good and especially if kept dry, maintained its deadly effective strength for years. When it loses its strength, they restore it by means of a little juice of the poison-cassava root (*Manihot utilissima*). After pouring some of it into the poison-calabash, they bury the latter, well covered, in the ground, and leave it there a day and a half: by that time the juice has mixed with the poison, the strength of which is said to be revived thereby.

961. That the poison after such an interval does in fact require a longer time to take effect, I have learnt by experience with poison made in my presence, because I brought it with me to Berlin and several times made experiments with it when from 15 to 20 minutes, according to the creature's tenacity of life, would often elapse before death took place. Unfortunately, one has not yet succeeded in obtaining a completely exhaustive analysis of the poison although the universally renowned chemist, Dr. Heintz of Berlin, has been a long time engaged on it.*

---

* Dr Heintz has kindly allowed me to publish his results so far obtained, for which I am all the more indebted because they constitute at all events the first, to a certain extent at least, detailed analysis of the much discussed poison:—

"Herewith, as requested, please find the certainly still incomplete results of my researches on the Urari poison received from you. The few prominent properties of its essential ingredient, especially its inability to crystallise either alone or in conjunction with other substances, stand in the way of its more accurate investigation and above everything else in obtaining it in a pure condition.

"In investigating this substance, it seemed to me above all important to prove the absence of strychnine which, for the rest, might have been expected owing to its being derived from a species of Strychnos, although judging from the nature and manner of its effects on the organism, it bears absolutely no resemblance whatever to it. With this end in view I boiled the watery solution of the substance with magnesia, filtered the precipitate, and after washing, boiled it with alcohol. This took up but an extremely small quantity of some extract-like stuff and on evaporation left no trace of strychnine.

"I accordingly tried, on the method laid down by von Boussingault (Annales de Chim. et de Phys. 38, 24), to obtain the soluble salty base discovered by him in the poison. The portion of the Urari dissolved in alcohol and water was treated according to his directions with tincture of gall, whereby the poisonous material was precipitated in conjunction with tannin. He dissolved this precipitate in oxalic acid and boiled the solution with magnesia so as to separate both the oxalic acid as well as the tannin. He filtered off the watery solution, evaporated it, and extracted the poisonous material with alcohol whereupon some insoluble magnesia-salt was left behind.

"In the course of my experiments I also secured a considerable deposit from the watery solution of the portion of Urari dissolved in alcohol and water by the addition of pure tannic acid obtained by Pelouze's method. Nevertheless, it did not dissolve so easily in oxalic acid as Boussingault mentions: on the other hand it was fairly easily soluble in boiling water. I therefore took it still moist from the filter and boiled it with magnesia: on evaporating to dryness there remained an extract-like material, which, on removal with alcohol, still left some insoluble magnesia-salt behind. The substance, boiled afresh, formed a brown-yellow extract that did not give an alkaline reaction as Boussingault states, but possessed the poisonous properties of Urari to a high degree.

"It was impossible to regard this substance as pure, because it could only be obtained as a brown extract. I accordingly searched for re-agents other than tannic acid, which might be able to precipitate it, and found them in mercury chloride and platinum chloride: with the latter, the precipitate was almost insoluble, with the former, on the other hand, it dissolved to a considerable degree by washing.

"I now treated the poison that had been precipitated by the tannic acid and again separated from it, by platinum chloride; the yellow precipitate that under the microscope seemed to be amorphous was washed, decomposed by heating with sulphuretted hydrogen, and I boiled the fluid that was filtered off from the platinum sulphide, with lead oxide. The poison could then be again extracted from the residue with alcohol, but as it still gave a yellow-brown extract after evaporation of the alcohol, I was unable to regard it as pure. Accordingly, I treated it afresh with chloride of mercury, washed the precipitate a few times and then separated the organic matter from the chlorine and mercury in the same way that it had been separated previously from the platinum and chlorine. Still, the material obtained was again a yellow-brown extract, although the precipitate obtained by the mercury chloride was completely white.

From the preceding, it will be seen that I have not yet succeeded in obtaining the poisonous material contained in the Urari in a pure state. Nevertheless, even in the impure condition in which I did obtain it, the smallest quantity was very effective. A rabbit, into which I introduced barely 3 milligrammes in a fresh wound in the thigh, was dead in seven minutes.

"This poisonous extract contains nitrogen, as can easily be demonstrated by Lassaigue's method with soda. It gives precipitates with tannic acid, platinum chloride and mercury chloride. The two former are yellow and the latter white. I have not been able to discover other prominent reactions of the substance.

"Besides the most important ingredient of the Urari poison, I found it to contain sugar, gum, resin, extractive matter, tannic acid, gallic acid and traces of compound salts of organic acids, probably tartaric and citric.

"This is all in short that I can tell you about the results of my investigations.

DR. HEINTZ.

962. Of all the many myths about the manufacture of Urari in association with pounded poison-fangs of the most venomous snakes, of ants, capsicums, etc.,—articles which so many travellers, who have witnessed its preparation, maintain they themselves have seen added, I have at least noticed nothing amongst the Macusis, although their poison is the most celebrated and most rapidly effective of any between the Amazon stream and the Orinoco. My old poison-maker, from whom I made enquiry, told me that neither the one nor the other was necessary and that he never added these, at the same time denying that they would contribute to its quicker action. The most difficult task for him was that he must submit to a stringent fast both before and during its manufacture. A further inviolable rule demands that during the boiling no woman nor maid, and most certainly no pregnant female, should come near the factory: the poison-maker's wife must also not happen to be in this condition. He also asked me, during the manufacture, not to eat any sugar-cane or sugar.† The fire below the pot must not be completely extinguished. Were any one of these tabus to be broken all his skill would prove ineffectual in preventing the article losing its virtue. The

---

†—This prohibition may well be the reason for the Indians believing that sugar-juice is an antidote for a wound by Urari: they consequently believe it would also lose its strength if an Indian after eating sugar-cane were to come close to the poison while being boiled.

poison maker also believes that he is sick for some days after preparing it. Mr. Youd informed me that the man who made the poison in his presence had commenced it on a Friday, and when on Sunday he told him to stop the boiling which he only reluctantly did, he had, nevertheless, kept under the pot during this very day at least some glowing charcoal; furthermore, he also did not attend Divine Service but sat outside the church by the window, for had he mixed among the crowd the strength of the article would have been destroyed. The manufacture of Urari seems to be without any danger; even the vapours that rise from the boiling poison are absolutely harmless, and only the stipulation that the boiling of the poison requires a few days, during which time the developing scum has to be continually skimmed, as well as the fatiguing superstitious custom which the poison maker has to follow appear to be the reason why it is manufactured only once a year or at the very most, twice.

963. As I almost daily, when out hunting, found opportunity to observe the effects of the poison, I was able to sketch out for myself a table indicating the tenacity of life of the different animals and classes of animals; this reached its maximum in the sloth. It is possible this may be due to the animal's peculiar vascular system and its consequent restricted and slow circulation: briefly put, the effects on it are the longest to appear, but at the same time the shortest to last, because with this animal there is no sign of even weak or slight convulsions as are always apparent in other creatures when the poison begins to act. I scratched the upper lip of a sloth, rubbed a drop of the poison into the wound, which gave no particle of blood, and then removed it close to a tree up which it commenced to climb. After clambering some ten or twelve feet it suddenly clung to the trunk, turned its head to this side and that, tried to resume the ascent, which it was no longer able to do, and then let go first of all with one of its forefeet, and soon afterwards with the other, but still remained hanging by its hind feet, until these also became limp, when it fell to the ground where, without any spasmodic convulsions, without any at all taking place even, it lay breathing with difficulty, until by the thirteenth minute its life had sped.

964. An effective antidote for Urari has indeed not been discovered so far, although the Indians mention many a one, but cannot guarantee escape absolutely. As already stated, among such is included sugar-juice alone, or mixed with the infusion from the root of a species of Wallaba (*Eperua* or *Dimorpha*); salt is also said to be counteractive. It is maintained that those poisoned with Urari suffer from the most awful thirst. For several years past many experiments have been made in London, particularly on donkeys, and in one case with successful results. For instance, a jenny was pricked in the shoulder; ten minutes later the symptoms of the death struggle were ended, and through an incision in the wind-pipe, atmospheric air was immediately and forcibly introduced into the lungs for two solid hours continuously, and the apparently escaped life returned: the donkey began to move her head, but with the

stoppage of pure air the signs of recalled vitality disappeared. After another two hours the forced air could be dispensed with; the animal once more stood erect on her legs and showed no further paralyses, while the wound through which the poison had been introduced healed without any trouble: it was only that all the generative functions seemed to have been essentially disturbed, a disturbance that was recovered after the course of a year. From what the Indians say, the poison acts quickest on monkeys and on felines.

965. I am repeating a story as it was told me that at the same time illustrates with what stoical courage, with what dignified resolution, the Indian submits to the inevitable. Two hunters go after monkeys with their blow-gun: they soon find their quarry—but one of them misses his mark, the little arrow falls back and strikes the hunter's arm where it remains stuck. He calmly pulls out the deadly tip, squats on the ground, takes his blow-gun, breaks it in pieces, puts his quiver and arrows beside him exclaiming "I don't want you again," says good-bye to his companion, and dies without saying another word.

966. As the action of the poison has been described so many times already, I would only just note here that if taken internally it is without effect, provided the mouth or palate is free from abrasion. When the Indians smear the arrow tips with it and a bit sticks on their fingers, I have often seen them licking it off without spitting it out again, and frequently enough done the same thing myself. As a matter of fact my brother on his first journey even took it in small doses as a cure for fever when the quinine ran out, but experienced a peculiar headache every time after taking it: his companions who recognised the dangerous character of the experiment, because he could easily have had an abrasion on the gums or palate without knowing it, broke him of the habit.* Increased atmospheric moisture deprives the poison of its strength, for which reason it is kept by the Indians in the driest spots of the house.

---

* These actual experiences are certainly opposed by others according to which the poison shows fatal results also if taken internally. Amongst the many experiments carried out by my brother, Otto Schomburgk, was one where he supplied three equally vigorous and healthy cats, the one with the poison externally, the second internally, and the third with an equal quantity of strychnine externally. The convulsions of the Urari poisoning completely sank into the background as compared with the tetanus and trismus of the strychnine poisoning, and the death produced by it in the former cases was, as compared with the latter, a quiet sleep. The cat externally poisoned with the Urari died in the course of 11 minutes, the one with strychnine in 12. The animal to which the Urari had been administered internally lived for 17 minutes, its death being accompanied by symptoms similar to those with the externally poisoned one: on dissection, the stomach as well as the whole of the small intestines was coloured with the dissolved poison, and no sign of a wound was to be seen either in the mouth or in the gullet. To these enquiries made several years ago. I now subjoin the following interesting facts in connection with the inward and outward application of Urari that have been established as the result of a whole series of experiments carried out at the beginning of the present year by Dr. Virchow prosector of the Königlichen Charité, and Dr. Julius Munter. The material investigated by them had been prepared in my presence, and accordingly must have been five years old. Here also, the internal poisoning showed the same effects as those noticed by my brother on the cats treated by him. Both gentlemen inform me of their results in the following letter, for which I hereby publicly express my thanks, because through its agency many an erroneous impression of the toxic effect will be refuted, while it is to be hoped at the same time that as a result of their efforts a correct knowledge of the poison will be obtained,

"The opinion has been recently expressed, particularly by Oesterlen (Handbuch der Heilmittellehre, Tubingen. 1845, p. 853) that the American arrow-poison Urari (Woorara, Oesterlen) and Curari (apparently identical with Urari) undoubtedly contained strychnine, and were said to produce quicker paralyses, but on the other hand less convulsions and cramps of the extensors. In spite of the second part of the assertion, which contradicts the first, Oesterlen includes the so-called arrow-poison, under the section of Pure *Tetanica*, *Spinantia*, under which are to be found Nux vomica, Strychnine, Brucin, Cocculus indicus, and Faba St. Ignatii.

"It appears now, however, from Dr. Heintz's analysis that there is no strychnine at all in Urari, although the physiological effects adduced by Oesterlen appear to correspond with Waterton's observations and your own. As we, however, have had the advantage of making direct trial with the poison itself, we gladly seize the opportunity of reporting in more detail on the toxic effects and final post-mortem appearances of Urari. In spite of the material, according to your own showing being already five years old, and notwithstanding the opinion of the Macusis, that it loses its essential properties within a space of two, we found it still so drastically effective that we all had the reason to guard ourselves against getting poisoned.

"Out of the still very firm extract of a brown-black colour and brittle consistency, we made a solution of 0.67 grammes to the dram of distilled water. A few drops of this concentrated solution was diluted with several ounces of distilled water and the undamaged hind foot of a frog held in it for 20 minutes: during this time the limb was sprinkled with a few drops of the concentrated solution, so as to give every opportunity for absorption to take place. But as the frog remained without any change we thought that the poison, so carefully applied, must be non-effective, or else that, according to your expressed opinion, its powers had really diminished and took longer to act. Within a quarter of an hour the creature was jumping round about all the more lively, and had apparently suffered nothing.

"We accordingly let a drop of the concentracted solution fall into an open serous cavity on the creature's right shoulder-blade: in the course of 6 minutes it tumbled on its front legs, which it placed flat on the table, whereupon the hind-quarters fell upon the outspread hind-legs and the frog was dead. On applying mechanical irritation, no convulsions followed: striking the board on which it lay produced no reflex action. A solution of strychnine inserted drop by drop in the wound of the already paralysed animal proved entirely without results.

"Ten drops of the same poison-solution were poured into a freshly cut wound in the neck of a rabbit. Before the end of three minutes, the animal sank altogether in a heap, involuntarily bent its head to the ground, where its front legs lay limp: this was followed by a few weak contractions of the flexors of the hind extremities, as well as by a peculiar motion of the under-lips, although these movements soon subsided. The heart-beat first of all stopped, then became regular again, its strength failed, and at the end of the seventh minute could no longer be felt. The thorax was opened, the auricles were still contracting, though weak. We accordingly performed tracheotomy and maintained respiration by blowing air into the wind-pipe, when the heart at the same time commenced to contract, violently, the auricles indeed more than the ventricles. After keeping up artificial respiration for 6 or 7 minutes, when the experiment was interrupted, we noticed the auricles still contracting in the 20th minute. Opening the heart for the first time on the following day normal blood-clots were found: the animal was in a state of rigor mortis.

"Another rabbit had a skin-wound an inch in length made in the middle down its back and twenty drops of the concentrated solution poured into it. The animal yet eating a little while subsequently to the operation, let its head drop involuntarily at the end of 12 minutes, the hinder portions of the body together with the outspread fore-feet lying limp upon the ground. Fifteen minutes after the administration the animal did not stir when pulled by the ears, and when held up by the same the extremities hung down limp and loose: the heart however still beat, at first in longer intervals with a short double-beat, then became regular, 96 to a minute, but after 20 minutes could no longer be felt. On opening the animal, straightway, it showed nothing in the way of blood-clots in the smaller or larger veins. The blood removed from the heart itself was still fluid, without alteration of colour, but clotted in a few minutes like the blood of slaughtered animals. The blood corpuscles were unaltered. The internal movements continued for some time longer. But while the ordinary muscular substance was still inclined to contract at the spots directly irritated, nerve irritation produced no motor signs.

*The above specified solution was also applied to the poisoning of a cat. We made a skin-wound 1½ inches long over the right shoulder blade, poured 10 drops of the solution into the wound, and let the loosened animal run about freely after the operation. While running around the room so sprightly, it crept to our great regret into the unknown piping of an empty stove that happened to be there. It was only got out 20 minutes later when it lay paralysed on the flooring boards. The head remained in any random position in which it was put, but the flexors of the extremities contracted frequently and briskly, the heart at first beat 88 to the minute and gradually stopped, though later than the contractions just mentioned. Tracheotomy was now performed, and artificial respiration kept up for 28 minutes, with the result that the heart commenced to beat afresh with 264 to the minute. However, there was no return of the sensory functions or motor effects, but on the application of a powerful mechnical stimulant, the animal's muscular system showed contractions.

From these experiments of ours we believe it must be now admitted :—

(1) That Urari, after being preserved in a dry condition for five years has an intensive and rapid action even in small doses.

(2) That Urari in conformity with its chemical composition produces none of the effects of strychnine.

(3) That Urari does not belong to the tetanus class of poisons, while it acts as a torporific similar to opium in big doses; if a few signs of convulsions are seen in cats they at all events constitute neither tetanus nor trismus.

(4) That Urari far rather causes paralysis *i.e.*, inhibition of voluntary muscular movement with the voluntary muscles (heart, intestines) continuing their function.

(5) That Urari does not appear to kill by absorption if applied externally, but chiefly only if absorbed when there is a rupture in the continuity of the living animal tissue.

(6) That after poisoning by Urari, rigor mortis and coagulation of the fibrin takes place in the same way as with an animal killed by mechanical means. Our opinion is that death is not so much due to the direct action of the poison as to the cessation of respiratory movements.

Dr Virchow. Dr Julius Munter.

967. Attention has already been drawn to Wassi poison, and to its being found especially among the Akawais, who receive it from the Serekongs, a tribe occupying the sources of the Mazaruni; the latter alone understand how to make it.

968. In Von Sack's "Reise nach Surinam," mention is made of an extremely poisonous *Arum* which is called Punkin there. The plant (*Arum venenatum Surinamense* Woelfers) is said to be so poisonous that a dog, to which ten grains of the juice were administered, died shortly after. It is quite possible that the Serekongs manufacture their poison also from a species of *Arum* with which the description of the root of the latter plant tallies. Could not the effects of the pulverised bulb be more slow than that of the juice? On our subsequent journeys many cases presented themselves where Indians, affected with the symptoms specified, hastened to us to seek assistance and recovery. Each one maintained that he was poisoned with Wassi. Although cases of real poisoning do actually take place, it is not to be denied that the everlasting suspicion and continual terror of the one having in some way injured another, who now might step forth as Kanaima and make an attempt on his life, is the cause of many a death. As a matter of fact, this dread and mistrust becomes an absolute certainty immediately an individual suffers from the symptoms of any complaint hitherto unknown to him, which he now regards as the effect of a poison that he probably never even tasted, with the result that, worried day and night by his lively imagination, his anxiety is at last roused to such a pitch that, unable longer to withstand the mental strain, his body falls a sacrifice to fear and fright.*

969. After a further stay of several days I returned with my friends to Nappi, where I found letters from my brother recalling me to Pirara owing to the expedition wanting to leave for the sources of the Takutu. Richly laden with spoil and contented in every respect with my trip, I started on my return journey to Pirara, where I found everything satisfactory. I brought with me some Indians, who were anxious to engage with us as carriers on the Takutu trip.

970. During my short absence the settlement, under the fostering care of Mr. Youd, had almost become unrecognisable owing to the

---

*—In the cases coming under my own personal notice there was no question of fear or fright, but a deliberate intent to lie down and die: imbued with the idea that his time is come, the Indian stoically awaits the end. I have met with the same mental condition amongst the North Queenland savages, where I have described it as Thanatomania. (Ed.)

tidiness and cleanliness that now prevailed; it seemed a different spot altogether. The military in the meantime had also left the village and retired within their defences, a small entrenchment guarded by barracks built of palm-fronds, to which the officers' quarters as well as the magazine, also covered with palm-leaves, were attached. The fortification was encircled by a ditch several feet wide and deep as well as by a five-foot high wall. Of what use such a fort would really prove if it came to a question of serious fighting with the Brazilians I could not rightly appreciate, even with my naturally slight tactical knowledge. The military had to fetch their water from a tolerable distance and, owing to the tropical heat, the Brazilians could have very easily forced the garrison to capitulate by cutting off the supply, even if they had not wanted to drive them out of their stronghold by setting fire to the magazine and barracks with fire-arrows, in the shooting of which they are unusually proficient. The Fort received the name of New Guinea.

971. On my first visit to it, I met the three deserters who had caused such an uproar at Nappi: the officers had received them with open arms and gladly gave them all they wanted, because it would now be possible to supply the military with fresh meat twice weekly. The horses that Mr. Youd as well as the officers had bought from Captain Leal enabled them to make use of their lassoes. Even if the captain had come to Pirara immediately after their flight and confirmed his opinion that the deserters would probably have made their way here, his demand for their surrender would have been met with anything but a favourable hearing, for with the extradition of the turncoats it would have been good-bye to the fresh meat. Captain Leal had accordingly to be satisfied with proclaiming them outlaws and return to Sao Joaquim with nothing done. Although many of their old comrades would gladly have earned the price set upon their heads, the deserters were nevertheless too wide awake and so far had fortunately known how to avoid all the traps cunningly set for them.

972. The cattle caught with the lasso was every time driven by the vaqueiros to the Fort and then shot. Hardly was one killed and slaughtered than the carrion-kites (*Cathartes aura* and *foetens* Ill.), Carrion-crows of the Colonists, flew down from all quarters of the wind, so that often within an hour 300 to 400 of these voracious birds had come to swallow the remnants and offal,—to their own disadvantage, however, because the officers usually dispelled the ennui that had set in by loading one of the cannon with musket ball, turning this upon the thickest swarm and firing, when from 40 to 50 specimens would be left behind at the spot picked on.

973. The many conflicting accounts found in the different natural history books concerning the mode of life of the *Cathartes aura* and *foetens* (the skin of the head is of a dirty flesh colour in the former, but blackened in the latter) led me to pay special attention to the bird, with a view to sifting the true from the false by personal observation. The contradictions just mentioned have also prompted me to describe the experiences gained, especially as they might be of more general interest.

974. The *Cathartes* is one of the most numerous and yet at the same time one of the most useful birds in almost the whole of South America. It differs from eagles and remaining birds of prey, particularly in its external conformation, by its prominent eyes and less crooked talons, its bare warty head and neck, and by the thick feather-down with which the inner side of its wings is covered; its whole demeanour besides is far from expressing the pride and dignity of eagles and falcons.

975. I have repeatedly seen the statement made that where there is a scarcity of carrion, the *Cathartes* preys upon living snakes, lizards, birds, and even mammals. But as such a statement has never been confirmed throughout a practically four years' residence in South America, during which I have had opportunities often occupying hours, even a day at a time, for watching the bird singly or in whole crowds surrounded by numbers of lizards, birds, etc., the layman is quite justified in doubting the statement of the ornithologists. As a matter of fact, even when the curling columns of smoke of a burning savannah attract hundreds of eagles and other birds of prey to seize upon the lizards, snakes and smaller mammals escaping as quick as lightning from the unloosened element, the *Cathartes,* greediest of all the birds, will never be noticed among the band of brigands.

976. The *Cathartes* is protected by law throughout almost the whole of South America, and in British Guiana a fine of $50 is inflicted upon anyone daring to kill one*; the reason is that the streets and yards cannot be kept cleared of dead and putrefying animal matter by any better sanitary police measures than by the greed of these birds. As a result of this universal protection they have become so bold, I might almost say, tame, that every newcomer takes them for domestic animals when he sees them perched often half the day upon the houses, fences and trees in indolent repose with dependent wings which they will leisurely outspread during and immediately after rain.

977. Were the *Cathartes* really to prey on living animals, the Negress, so apprehensive of her young poultry, would surely not let it roost quietly in the neighbourhood of her fowl-house: for with the approach of any other bird of prey, everybody, poultry as well as the crowd of black females, immediately gets into such a state of excitement and commotion as to scare away the daring thief with all their screams and uproar.

978. As already stated, one will search in vain for a *Cathartes* amongst the crowds of birds of prey that swarm over a burning savannah; it circles round the burnt-off patch only on the day after the fire, in often countless numbers, to consume the snakes, lizards, etc., overcome by the heat and moisture that have been despised by the others. I was myself at first deceived on several occasions, when, on watching a bird that in the distance I took to be a carrion crow, I saw it

---

* The Ordinance was repealed only some few years ago. (Ed.)

chasing snakes, until I found on closer inspection that it was another and larger bird of prey.

979. It is just as incorrect and false for some ornithologists to maintain that the *Cathartes* only starts consuming a dead animal after it has gone putrid, a condition which at all events under the tropical sun here, occurs quickly enough as it is; the smell of the fresh meat appears to be just as attractive as that of the carrion, and judging from the greed with which the bird swallowed the former at Pirara, it must be considered just as tasty as the latter.

980. We found similar numbers also on the savannahs of the Takutu and of Fort Sao Joaquim, where large herds of cattle are wont to graze. If of a morning we left our camp, or the spot where we had breakfasted, the birds gathered in a trice even out of the almost invisible heights, from every direction, to consume the remnants. When the latter is small and scanty it generally gives rise to the most violent strife; if, on the contrary, it happens to be plentiful, there is no cause for contention and brawl, and the birds gorge their crops and maws with such quantities of large chunks that, no longer able to fly, they remain helpless on the ground. Should they be surprised when in this condition, and the danger is imminent, they finally resort to the one and only method of escape, to wit, they disgorge, and fly away relieved. Most of the observations as to the *Cathartes aura* being attracted just as rapidly by the smell of fresh as by putrid meat, were made by myself en route. No sooner had I shot a mammal or a bird and skinned it, than some of the gluttonous birds drew near and consumed the carcass that I had flung aside.

981. Our Indians amused themselves over and enough at the places where we rested by fixing a piece of meat on a hook and then casting it towards them. No sooner was this done than the greediest and smartest of the *Cathartes* would be struggling on the line, when it would be transformed into a fantastic monstrosity by the mischievous anglers, who usually decorated it with strange feathers which they stuck on with soft wax, cut neck-frills and similar things, and after crowning, sent it back to its own crowd amongst which their ghost-like relative caused the greatest consternation and only too soon found itself isolated and abandoned until such time as the borrowed plumes could be removed, and its presence again tolerated.

982. One frequently finds the Caracara eagle associated with the *Cathartes*; like the latter it also feeds on carrion and is attracted by its smell. It is a bold but very quarrelsome bird which is continually fighting with the *Cathartes* for the best morsels at a meal.

983. However much its keenness of vision may contribute to the discovery of its prey, it seems to me that the *Cathartes'* chief guide is its delicate olfactory sense. The statement that, owing to the tropical trade-winds prevailing, the smell cannot be carried to the birds equally and in all directions, because it would be borne on the current of air always in one and the same course is just as unfounded. How often have I noticed that while the higher layers of clouds were rolling from east

to west, an undercurrent of air was driving the lower-hanging cloud-masses exactly in the opposite or at least a different quarter of the compass. It was of a morning, of an evening, and especially in the neighbourhood of the larger forests that this phenomenon particularly took place; it certainly must spread in all directions the particular smell of slaughtered or dead animals that is followed by the *Cathartes,* which probably sniffs the atmosphere around for indications of the presence of its meal until it is found. The bird is at the same time so perfect at making skeletons that one might imagine the bones had been cleaned most carefully of their flesh with a knife.

984. I never succeeded in finding their nests, which the Indians say are built in crevices of the rocks and generally contain but two eggs. On the coast, however, according to general report, they are built on the ground in the sugar-cane fields. One to two months' old birds which I found in an Indian settlement, had a covering quite like our young geese and swans, except that the down was dirty white: their note exactly resembled that of young swans.

985. I was able to confirm the extremely remarkable and striking phenomenon which now and again has been doubted, that the King Vulture (*Vultur papa* Linn.), the local King of the Carrion Crows, not only demands royal honours and sovereign reverence, by some sort of forced instinct as it were, but also receives the deepest respect from the whole family of carrion-kites.

986. The *Vultur papa* is far from being as plentiful as the former, and is always to be found solitary, except when some carrion happens to attract several together, though even then the number does not exceed from three to six. It generally attains the size of a turkey, in connection with which the skin of its head and nape shines with the most brilliant colours, which, unfortunately, completely fade at death. Throat and nape are bright orange, the sides of the neck, from the ears down, are on the contrary brilliant scarlet, a colouring also possessed by the cartilaginous fleshy crest, while the portion of skin between the eyes and lower chin, in the neighbourhood of the ears, slips in with a blue. Surrounded with a red ring of skin, the eyes themselves are of a scarlet colour, in which the brilliant white iris becomes all the more prominent. The wrinkled portion of the skin is a dirty light brown which below and behind the warts alternates with blue and scarlet. The beak itself is coloured orange and black, while the crop, which is only outwardly visible when full of feed, has a delicate white colouring interspersed with blue veins. The tail and long wing-feathers are black, the body and remaining feathers more or less white.

987. Though there may be hundreds of *Cathartes* in full swing over a carcass they will immediately withdraw on the approach of the *Vultur papa.* Seated on the nearest trees, or, when these fail, upon the ground, they then watch with covetous and envious gaze until the tyrant has satisfied his hunger and retired, which no sooner takes place than they pounce again with wilder and enhanced greed upon their forsaken meal to swallow the remnants disdained by him. This respect

and awe for the *Vultur papa* many travellers have reported of an eagle; nevertheless, as I have very often been witness of this interesting scene, I can affirm here that no other bird can boast of similar respect and sacrifice on the part of the *Cathartes*.

988. The female of the *Vultur papa* is larger than the male, just as she likewise differs in that, except for the white feathers under the wings, she has an absolutely black plumage. In colouring, the female almost exactly resembles the *Cathartes foetens,* for which reason the two are often mistaken. According to our observations the females must be much more numerous than the males. During the first year the young males correspond entirely with the females as regards plumage colour: in the second year they receive several white spots, until finally in the third year, like so many other South American birds, they get their proper covering and head and neck take on their mixture of pigment. The purest pearl cannot be whiter than the iris of *Vultur papa.* We were, unfortunately, unable to obtain any information as to their breeding. They probably hatch only in the farthest remote and loneliest spots or upon inaccessible rocks. In the neighbourhood of the coast the *Vultur papa* seems to be more plentiful than in the interior, where I have met with it pretty well down to the Equator, but always only rarely.

989. The Macusis call it Cassana; the Wapisianas Panaourau; the Warraus, Wouraerepo. When rising for flight it always makes a great noise with its wings. It often overeats itself to such an extent that it cannot move. If the crop is full of food the bird diffuses an intolerable smell of carrion; if empty it is replaced by a strong odour of musk which is also peculiar to the *Cathartes aura* and *foetens.* When the *Vultur papa* has smelt out a carcase it does not resign itself immediately to the feast, but first of all takes up a position at a little distance away, upon a tree, or, if such be wanting, upon the ground where it dips its head and neck deep down in between the wings and now and again casts a look at the dainty meal: it is just as if it wanted to whet its appetite to the greatest possible extent by such abstinence, for it is often only after a quarter or half an hour that it gives full play to it. It is remarkable further that the *Cathartes* withdraw immediately they see the *Vultur* approaching in the distance and make quite extraordinary gestures with their heads at one another directly it really appears. They seem to be welcoming their master in due form: at least, it was thus that I explained the ducking up of their heads and the flapping of their wings. As the King of the Vultures sets to work, they sit absolutely still and watch him feeding with yearning craws.

990. In order to establish easy and rapid communication between the village, i.e., the members of the Boundary Commission and the occupants of the Fort, flag-telegraphs which, according to Captain Marryat's system, are now customary on all British ships, had already been set up in both places. In this way we could quickly enter into communication with one another, a convenience that might prove of importance to both parties in the immediate future, because during the

last few days fairly disquieting rumours had spread abroad through the agency of the Indian strangers who visited us. The Brazilians, it seemed, were preparing for war; indeed, there were even troops already on the way to Fort Sao Joaquim, which, in conjunction with its garrison, were to seize Pirara and drive out the English. Though the flags were certainly never employed for war signals, they were all the more frequently utilised for mutual invitations, be it now for a dinner, a hunting party, or something else of the same sort.

991. The season of the year was already too far advanced to allow of us carrying out our original plan of travel, which was to follow the course of the Cotinga and from there push on to the highest rise of the Pacaraima Range and its real point of junction with the Parima Range of the Orinoco which, at the same time, forms the watershed between the river system of the Orinoco, Essequibo and Amazon; the journey could not be extended now to such a length, and so the source of the Takutu came to be chosen as the aim and object of our present expedition.

992. Although Captain Leal, on his late visit, had promised the Expedition to send a large corial as far as the mouth of the Pirara, so that the instruments at least could be conveyed in this up the stream, the vessel mentioned had not yet come to hand, and we could explain its non-appearance by nothing else than that the rumours of the Indians were not entirely without foundation, and that probably he no longer had a free hand over his actions. The longer the delay the closer the rainy season, and our journey had to be completed before its commencement.

993. Our houses accordingly presented a busy appearance once more. I had to expose the treasures I had gathered several times again in the sun, to put them away afresh, and to stack them in the driest places. Then followed the packing up of the astronomical instruments of the expedition, the provisions, kitchen apparatus and European tools: for although the Indian understands how to make thousands of things with the knife that he has either swapped or earned, cases nevertheless only too often occur where, as we had learnt by experience, this is not sufficient. With this baggage was now also included the articles of trade and a quantity of rum for the Indians with whom we were to come in contact, and then my bibulous paper for drying the plants. All objects were packed in tin cases and bags of ticking which, to prevent the water getting in, were thickly smeared with tar and oil-paint. However reluctant we were to consent to this matter of rum, it was nevertheless one of the necessary evils, because it is the only infallible means of making the assistance and services of the Indian available to the traveller. If no knife or axe can tempt the lazy Indian out of his hammock and induce him to render some indispensable service, a glass of rum will manage it. Comfort, together with every obstacle that previously confronted him like an armed guard, must now yield to the mighty Spirit: however great may be the labour demanded of him to earn it, he cannot resist the temptation of the glass: whatever is asked of him, the glutton now considers nothing too hard. If you promise an Indian a

glass of rum, but at the same time make him thoroughly understand you haven't it with you at the present moment, but that he must come for it here or there after the work stipulated for is finished, he will do what is asked of him and put in yet another day's journey just to satisfy the tickling of his palate.

994. As each carrier's load dared not exceed 60 lb., a lot of packages had naturally to be made, and many an Indian was required to transport it. Nevertheless these were obtainable, for all the settlements sent their contingents, and every one was glad to come with us. Every Indian who accompanied the expedition received per month from the British Government "trade" to the value of six dollars, which he could choose as he pleased, and which was paid to him on completion of every journey or on performing the distance he was hired for, because we had learnt by experience that the child of the forest does not consider himself in any way bound by an advance of pay to complete the contract agreed upon.

995. I wanted six Indians for my bag and baggage: but to have given each of them six dollars' worth of trade monthly, out of my small means which the journey to Pirara had already completely swallowed—my brother had long ago seriously blamed me for it—was a matter of absolute impossibility, and I accordingly had to look after my own interests in some other way. After the Indians had been hired for the Boundary Expedition there were still to be found many willing hands on the market waiting for a master to engage them. I then came forward with my proposal. Like a wise housekeeper I had divided my trade for this and the next expedition. The portion for the present one I again divided into six parts, exposed them in the open, outside the house, and now asked, "Who will come with me for this, and this, and this heap, under such and such conditions?" and look here, I soon had six willing companions, who certainly did not receive a fourth part of what awaited their remaining fellow-travellers, but who yet served me with the same fidelity and sacrifice without ever giving expression to a grumble, growl or grudge at the others. This and many another are traits of character which compensate for many a dark spot in their lives and have made the honest-hearted fellows beloved and dear to me.

996. On the last night but one prior to departure not only I but also the occupants of the Fort were wakened from sleep by several gunshots. We already imagined the fort and Pirara to have been surprised and in the hands of the Brazilians, until it was found that one of the stranger Indians had died. As Mr. Youd had given the strictest orders forbidding any burial of the dead in their houses, and was keeping equally strict watch that the Piai should not play his games again, the body was carried in the morning to the burial-place situate in front of the village, although the deceased in no sense belonged to the zealous missionary's congregation, he having come here with his family only out of curiosity to see the white people.

997. The two adult sons carried their deceased father in his hammock to the cemetery, while the wife and daughter followed with fruit, bones,

several thongs, and a flask filled with water. I joined Mr. Youd, who did not seem to be over-confident that his orders would be obeyed unless he himself were present at the funeral. As we reached the spot, the two sons were digging the trough-like grave, but the wife and daughter were sitting on each side of the corpse and in a whining tone singing those peculiar affecting and monotonous songs of lamentation, all the while that they carefully drove away every insect that settled on the body, and when the sun cast its rays upon the face, covered it with some twigs. After the sons had completed their labours the grave was lined with palm-fronds and the corpse placed in an almost sitting position with the head to the west. For his future use they supplied him in the grave with the objects brought along by the wife and daughter, to which was also added a drinking cup and his knife. The man had died in a high fever, and being naturally continually tormented with thirst he had bidden his people shortly before his death to give him a flask full of water in the grave, so that he might quench his thirst on the long journey to his friends who had gone before. His relatives gave him the strips of leather to tie the Kanaima to a tree with, should he chance to meet him on the way, for this individual likewise here was the cause of the death. After the corpse had been carefully covered with palm-fronds, the grave was closed in to the accompanying din of howling grief and a large fire lighted on top; the hammock was not burnt as at Nappi, but hung up on a tree close by, where it would rot into pieces. Several half-tattered hammocks, hanging from the neighbouring trees, whence they swayed hither and thither in the wind, indicated the presence of several bodies already buried here.

998. Although for a long time past it had been a lively wish of mine to get hold of some skulls and skeletons for the Anatomical Museum in Berlin, the love and respect which the Indians pay to the remains of those departed, as well as their conviction that it is a very serious crime to disturb the latter, had prevented my gratifying it even up to the present. The custom of burying the dead in the houses made a nocturnal robbery impossible, but in Mr. Youd's arrangements an opportunity now offered itself of gaining my object on our return from Roraima. The habit adopted at every occurrence of a death, as soon as the relatives own a gun, of notifying the same to the inhabitants with three shots has been learnt by the Macusis from the coloured people on the Essequibo.

[End of Volume One.]

INDEX TO VOLUME 1. *

Aberisto, the Brazilian, 860.
Acacia Westiana *DeC.,* 781.
Acanthaceae, 623.
Acara margarita *Heckel,* 889.
Acconchement, 437-9.
Achras sapota *Linn.* Sapodilla, 116.
Acra-mucra Falls, 763, 766.
Acrocomia sclerocarpa *Mart.,* 898, 920.
Aeneas, 301.
Aërnauta Leilus, 301.
Aërnauta Nestor, 241, 301.
Aeschynomene, 218.
Aeschynomene ciliata *Vog.* 725.
Aeschynomene coccinea *Linn.* *See* Sesbania grandiflora.
Aeschynomene grandiflora *Linn.* *See* Sesbania grandiflora.
Aeschynomene mucronulata *Benth.* 839.
Aeschynomene paniculata *Willd.* 707.
Aeschynomene sensitiva *Swartz,* 707.
Agamia agami Gm., (Ardea agami *Linn.*), 337.
Agave, 362.
Agelaeus icterocephalus *Linn.* (Icterus i. *Daud.*) 201, 243.
Agricultural Union, Georgetown, 109.
Aguti. *See* Dasyprocta.
Aharo Falls, 710.
Akaiwanna Range, 751.
Akawai or Waika, 530-1, 536.
Akee (Blighia sapida), 237.
Alcedo, 778.
Alcedo amazona. *See* Ceryle a.
Alcedo Americana *Linn. Gm.* 719.
Alcedo bicolor *See* Ceryle inda.
Alcedo superciliosa. *See* Ceryle s.
Alcedo torquata. *See* Ceryle t.
Allamanda Aubletii *Pohl.* 300, 391.
Alligator, 376. *See* Kaiman.
Alligator punctulatus *Spix.* 244.
Alpinia latifolia *Willd.,* 898.
Alsodeia laxiflora *Benth.* 784.
Amasonia erecta *Linn.* 839, 863.
Amazon Parrot. *See* Psittacus pulverulentus.
Amazona aestiva *Linn.* (Psittacus aestivus *Linn.*) 313, 326, 445.

---

* The numbers refer to the Sections,

Amazona farinosa *Bodd.* (Psittacus pulverulentus *Gm.*) Amazon Parrot, 326, 633.
Ampelis (Cotinga), 339.
Ampelis cayana. *See* Cotinga c.
Ampelis carnifex *Linn.* *See* Phoenicocercus.
Ampelis rubricollis. *See* Querula cruenta.
Amphymenium Rohrii *Humb. Bonp.*, 708.
Ampullaria guianensis *Spix.* 887, 896.
Ampullaria papyracea *Spix.* 887, 896.
Ampullaria urceus *Fers.* 529, 561.
Amucu Lake, 862.
Amyris ambrosiaca *Willd.* 812, 918.
Anableps tetrophthalmus, Four-Eye, 291.
Anacardium occidentale *Linn.* Cashew 488.
Ananas edulis. Pine-apple, 116, 241, 304, 314-5, 727, 730.
Anas, 846.
Anas autumnalis. *See* Dendrocygna discolor.
Anas brasiliensis *Linn.*, 866.
Anas moschata. *See* Cairina m.
Anas viduata. *See* Dendrocygna v.
Anchises, 301.
Anchises phorbanta, 241.
Andira inermis *Humb. Bonp.*, 701.
Andira laurifolia *Benth.*, 758.
Anodus alburnus *Müll. Trosch*, 889.
Anodus ciprinoides *Müll. Trosch.*, 889.
Anona muricata *Linn.* Soursop, 116.
Anona squamosa *Linn.* Custard Apple, 116.
Ant, 392-3, 623-5, 643, 892.
Ant-bites for Rheumatism, 343.
Ant-eater, Giant. *See* Myrmecophaga.
Ant-hills, 854.
Antonia pilosa *Benth.*, 707.
Apeiba Tibourbou *Aubl.*, 893.
Apocyneae, 862.
Apron belt, 526, 531.
Ara. Macaw, 777.
Ara ararauna *Linn.* (Psittacus a. *Linn.*) 319.
Ara macao *Linn* (Psittacus m. *Linn.*), 319.
Arabian (Aroabisce) Coast, 281-5, 646.
Aramades cayana *Mull.* (Crex melampyga) 201, 543.
Arapaima gigas *Cuv.* (Sudis g. *Cuv.*) 807, 826, 832.
Arawak, Manners and Customs, etc., 592-9.
Arawak, Physical characteristics, 592.
Arawak, Spanish, 618, 620.
Ardea, 759, 778, 846.
Ardea agami, *See* Agamia agami.
Ardea brasiliensis, *See* Tigrosoma b.
Ardea cocoi, Heron, 703.

Ardea coerulescens, *See* Florida coerulea.
Ardea leuce *See* Herodias egretta.
Ardea leucogaster. *See* Hydranassa tricolor.
Ardea nivea, *See* Leucophoyx candidissima.
Ardea scapularis, *See* Butorides striata.
Ardea tigrina *See* Tigrosoma lineatum.
Areca oleracea *See* Oreodoxa oleracea.
Arissaro Mts., 726.
Aristolochia, 514.
Aroids, 318, 320, 519, 611, 937.
Arowana, *See* Osteoglossum bicirrhosum..
Arrindell, Mr: afterwards Chief Justice of the Colony 212-3.
Arrow-root, 116.
Artanthe apiculata, *Klotzsch.*, 756.
Artanthe corylifolia, *Klotzsch*, 756.
Armstrong, Missionary 252.
Artesian Wells. 133-141.
Artocarpus incisa *Linn.* Bread-fruit, 116, 200, 233-9.
Artocarpus integrifolia *Linn.* Appears to be confused with the preceding.
Arundinocola leucocephala *Linn.* (Muscicapa l. *Tem.*) Parson-bird, 201.
Arupa Cassava-press, 330, 693.
Asacota Village, 588.
Asclepias curassaviaca *Linn.* 154, 200.
Aspasia, 846.
Aspidium gongyloides, *Kl.* 614.
Aspidosoma maculatum (Lampyris phosphorea *Linn.* 69).
Astrocaryum, 268, 581, 929 A.
Astrocaryum gynacanthum *Mart.* 759..
Astrocaryum Jauari *Mart.* Sawari palm, 772.
Astrocaryum tucuma *Mart.*, 862.
Astrocaryum vulgare *Mart*, 759.
Astronomical Society, Georgetown, 109.
Astrophea glaberrima Klotzsch, 863.
Atta cephalotes, 623.
Atticora fasciata *Gm.* (Hirundo f. *Lath.*) Swallow, 478, 703.
Aurimé Bight, 779.
Aurora, Pln., 617.
Avicennia, 350-1.
Avicennia nitida *Linn.*, 57, 284.
Avicennia tomentosa, 284.
Avocado Pear, *See* Persea gratissima.
Awarikuru, 845-6.
Awarra Village. 893.

Babracote, Barbecue, *See* Meat, smoked.
Bach, Mr., Coffee-planter, botanist, etc., 148, 678, 680, 882,
Bacopa aquatica, *Aubl.*, 320, 708, 852,
Bactris 268, 789, 929 A.

Bactris acanthocarpus *Mart.,* 494, 514, 581.
Bactris concinna *Mart.,* 908.
Bactris mitis *Mart.,* 898.
Bactris pectinata *Mart.,* 759.
Bactris tomentosa *Mart.,* 759.
Baducca dance, 872.
Bagassa guianensis *Aubl.,* 701.
Bagrus mesops, *See* Sciadeichthys m.
Balsams, 65.
Banab, Benab, a temporary shelter, 720 *et seq.*
Banana, *See* Musa sapientum.
Bands worn on calves, etc., 658, 775.
Banking Institutions, Georgetown, 110-1.
Barabara River, Flora of, 610-21.
Barima Basin, Flora of, 514-28.
Barimani River, 578.
Bark shirts, 880.
Barreria theobromaefolia, *Willd.,* 701.
Bartica Grove Mission, 251-9, 651-2, 661.
Basico, Chief of Pirara, 855.
Baskets, Boxes, 397, 547, 599, 802.
Bauhinia, 65, 218.
Bauhinia macrostachya, *Benth.,* 839.
Bays, Bights, Kirahaghs (Lingoa Geral), 778.
Beara River, 581.
Beetles, 336.
Begonias, 300.
Beliefs, Religious. Warrau, 453-60.
Belonopterus Cayennensis *Gm.,* (Charadrius c.) 887.
Bell-bird. *See* Chasmarhynchus.
Belly-ache, Dry, 649.
Bentham, Prof., 26.
Bernau, Rev., 251.
Besleria coccinea, *Aubl.,* 320.
Bête Rouge, Trombidium sp., 339.
Betyllus sp., 542.
Beyrichia ocymoides *Chamiss. Schlcht,* 708.
Bidens bipinnata *Linn.*
Bifrenaria, 584, 611, 846.
Bifrenaria longicornis *Lindl.,* 392.
Big Bills *See* Rhamphastidae.
Bignonia, 65, 694, 725, 919.
Bignonia alba, 391.
Bignonia chica *Humb.,* 547, 659, 800.
Bignonia heterophylla *Willd.,* 391.
Bignonia incarnata, 391.
Bill-birds *See* Rhamphastidae.
Bingham, Lieut., 847.
Bitter Ash, *See* Quassia amara.

Bixa orellana *Linn.* (Ruku), 488, 547, 659.
Blechnum angustifolium *Willd.*, 614.
Blighia sapida, Akee, 237.
Blow-gun, 914-5.
Boa murina (Eunectes murinus *Wagl.*) Comudi, 570, 572, 846.
Body-painting, 550, 658.
Bombaceae, 898
Bombax ceiba, 383.
Bombax globosum, 242, 318, 383, 768, 914.
Botanical Society, Georgetown, 110.
Bowditchia, 862.
Bradypus tridactylus, Sloth, 379, 380, 656.
Brassavola, 949.
Brassavola augustata *Lindl.*, 392.
Brassia lanceana, 392.
Brassia macrostachya *Lindl.*, 392.
Bread-fruit, *See* Artocarpus.
Brett, Rev., 304.
Brigade, The Georgetown, 145.
British Museum, London, 22-3.
Bromelia, 846, 898.
Bromelia Karatas. *See* Karatas.
Brosimum, 914.
Brosimum Aubleti. *See* Piratinera.
Brotogerys taipara *Linn.* (Psittacus t. *Linn.*) 201.
Brownea racemosa *Jacq.*, Rose of the Tropics, 518.
Buccinum Miga *Adans.* 287.
Bucco cinereus *See* Monacha nigra.
Bucco tenebrosus *See* Chelidoptera t.
Buchnera lavandulacea, *Chamss.* 863.
Buchnera palustris *Spreng.*, 852.
Buprestidae, 336, 553, 886.
Burial ceremonies, Macusi, 908-11, 996-7.
Burlingtonia, 584.
Bush, Lieut., 847, 881.
Bush-rope, Vine-rope, 515-6.
Butorides striata *Linn.* (Ardea scapularis *Ill.*) 201.
Buttneria ramosissima *Pohl.*, 852.
Buttneria scabra *Linn.*, 852.
Byrsonima, 854, 893, 930.
Byrsonima altissima *De C.*, 494.
Byrsonima crassifolia *Humb. Bonp.*, 839.
Byrsonima Moureila *Loud.*, 839.
Byrsonima verbascifolia *De C.*, 839, 863.

Cabbage, 116.
Cabbage Palm, *See* Oreodoxa oleracea.
Caberalli, Arawak Chief of Asacota, 395-8, 400-2, 470, 496, 527, 529.

Cacoucia coccinea *Aubl.*, 391, 493, 725.
Cactus, 862.
Cairina moschata *Linn.* (Anas m. *Linn.*) Muscovy duck, 357, 790, 823, 887.
Caladium, 887.
Caladium arborescens, *See* Montrichardia.
Calandra palmarum. *See* Rhyncophorus.
Calathea, 330, 599, 898.
Calathea juncea, 669.
Calathea lutea, 669.
Caledonia, Pln., 635.
Callichthys, 822.
Callithrix sciurea, *See* Saimiri.
Calves and legs, Scars on, 597.
Calyphrantes obtusa, *Benth.*, 725.
Calyptrion Aubletii *Ging.*, 514, 727.
Calyptrion nitidum, 727.
Camara tiliaefolia, *Benth.*, 839.
Cambori, Chief of Waraputa, 730.
Camp House, Georgetown, 100.
Campylopterus largipennis *Bodd.* (Trochilus campylopterus *Linn.*), 312.
Cancer cordatus, *See* Ucides.
Cancroma, 778.
Cancroma cochlearia, Canoe-bill, 365.
Canoe-bill, *See* Cancroma cochlearia.
Canis Azarae, 927.
Canuku Ranges, Excursion to, Ch. IX.
Capouye Lake, 647.
Capreolus rufus, *See* Mazama americana.
Capreolus simplicicornis, *See* Mazama s.
Capsicum, 116, 304, 330.
Capuchin bird, *See* Coracina.
Caracamata seeds for Morocotu, 367.
Carapa guianensis *Aubl.* Crabwood, 318, 446, 546-7, 569, 701.
Carbo *Lac.* Osprey, 725, 759, 778, 846.
Carex, 839.
Caria-Caria Mission, 267, 271.
Cariacru paint, 547.
Carib settlement, Kaitan, 657-8.
Carib settlement on Rupununi, 773.
Carica papaya, *Linn.* Paw-paw, 116, 304.
Carolinea princeps *See* Pachira.
Carrion Crow, Kite, etc., *See* Cathartes.
Caryocar glabrum *Pers.*, 701.
Caryocar tomentosum *Willd.*, See Pekea.
Cascalho, 302.
Casca pretiosa, 943.
Casearia brevipes, *Benth.*, 854.

Casearia carpinifolia *Benth.*, 854.
Cashew, *See* Anacardium.
Casiri, 545.
Cassava, 116, See Janipha.
Cassava-bread drink, 462.
Cassia, 831, 854.
Cassia alata *Linn.*, 154, 200.
Cassia bacillaris, *Linn.*, 725.
Cassia calliantha *Meyer*, 200.
Cassia cultrifolia *Meyer*, 863.
Cassia fistula *Linn.*, 153.
Cassia flexuosa *Linn.*, 725.
Cassia latifolia *Meyer*, 200, 725.
Cassia lotoides *Humb. Bonp.*, 863.
Cassia moschata *Humb. Bonp.*, 725.
Cassia multijuga *Rich.*, 153.
Cassia occidentalis *Linn.*, 154, 200.
Cassia prostrata *Linn.*, 863.
Cassia undulata *Benth.*, 893.
Cassia venenifera Röd, 200.
Cassia viscosa *Humb. Bonp.*, 893.
Cassicus cristatus *Daud.*, 507.
Cassicus haemorrhus *Daud.*, Trupial, 243, 642.
Cassicus niger, *See* Ostinops.
Cassicus persicus *Daud.*, Trupial, Mocking-Bird, 242-3, 642.
Cassidea, 336.
Catasetum, 611, 846.
Catharista, *See* Cathartes.
Cathartes atratus *Bartr.* (C. foetens *Ill.*), 200, 972-4.
Cathartes aura *Ill.*, 200, 777, 864, 972-84.
Cathartes foetens, *See* C. atratus.
Cattle, Wild, 864.
Cattle, Wild, catching and killing, 874.
Cattleya superba *Schomb.*, 763, 831, 846.
Cauliflower, 116.
Cavella, 49.
Cayanus indicus *Spr.*, Pigeon-Pea, 116, 200.
Cebus appella, 788, 792.
Cebus capucinus, 788, 792.
Cecropia peltata *Linn.*, Trumpet tree, 490, 513, 520, 768.
Cedar, *See* Icica altissima.
Cedrela odorata *Linn.*, 701.
Centifolia, 65.
Centropyx, 854.
Cephaelis involucrata *Willd.*, 541.
Cephalopterus, 879.
Cerambicidae, 886.
Cerchneis sparveria *Linn.* (Falco sparverius *Linn.*), 854.
Ceremonies, Master of the, 558.

Cereus hexagonus *Haw.*, 862.
Cereus pentagonus *Haw.*, 862.
Ceryle amazona *Lath.* (Alcedo a. *Lath.*), 719.
Ceryle inda *Linn.* (Alcedo bicolor *Linn. Gm.*), 301, 719.
Ceryle superciliosa *Linn.* (Alcedo s. *Linn*), 301, 719.
Ceryle torquata Linn. (Alcedo t. *Linn. Gm.*), 479, 719, 759.
Chaetobranchus flavescens *Heckel.*, 889.
Chamaedorea pauciflora *Mart.*, 898.
Chamaepelia passerina *Linn.* (Columba p. *Linn.*), 864.
Chamaepelia rufipennis *G.R.Gr.* (Columba rufina *Tem.*), 769, 864.
Chamaepelia talpacoti *Tem.* (Columba t. *Tem.*) 864.
Charadrius, 290
Charadrius cayennensis, See Belonopterus.
Chasmarhynchos carunculatus, *See* C. niveus.
Chasmarhynchos niveus *Bodd.* (C. carunculatus) Bell-bird, 774, 891. 919, 921.
Chelidoptera tenebrosa *Pall.* (Bucco tenebrosus *Gm.*) 747.
Chelys fimbriata, Matamata, 747.
Chenopodium ambrosioides *Linn.*, 200.
Chiefs, *See* Basico, Caberalli, Cambori, Clementi, Irai-i, Jan, Manawari, William.
Chiefs, Staff of Office, 306, 523.
Chigoe, *See* Pulex penetrans.
Chironectes, 204
Chomelia angustifolia *Benth.*, 708.
Chorineus, 241.
Chrysobalanus pellocarpus *Meyer*, 725.
Chrysolampis mosquitus *Linn.* (Trochilus moschatus *Lath.*) 201, 312, 864.
Chrysophyllum cainito *Linn.*, 116.
Churches in Georgetown, 103.
Cichla, 808.
Cichla ocellaris *Bloch* (Cichla argus *Humb.*) Luganani, Sunfish, etc. 721, 880.
Ciconia maguari, 887.
Cicadas, 69, 336, 886, 922.
Cissampelos, 929 A.
Clay for Pottery, 659.
Clementi, Warrau chief of Warina, etc., 497-506, 509-11, 523, 527, 567.
Cleome pentaphylla, Spinach, 116.
"Cleopatra," Barque, 31.
Clerodendrum, 65.
Clerodendrum inerme *Wall*, 152, 218.
Clibadium asperum *De C.*, 781.
Clidemia agrestis *Don.*, 541.
Clidemia elegans *Don.* 725.
Cliff, The. Now known as The Klip, 649.
Clinogyne dichotoma *Salisb.* (Maranta ramosissima *Wall.*) Arrowroot, 116.

Clitoria, 65.
Clitoria Poiteaui, *De C.*, 391, 727.
Clusia, 260, 518, 930, 939.
Clusia insignis *Mart.*, 391.
Cnemidophorus, 854.
Coast-line, Changes in, 629.
Cocoa-nut, *See* Cocos.
Cocos nucifera, 57, 65, 116, 640, 701.
Cock-Fighting, 179-81.
Cock-of-the-Rock, *See* Rupicola.
Coecilia annulata. Two-headed Snake, 625.
Coelogenys paca *Cuv.*, Laba, 204, 418.
Coereba cyanea *Linn.* (Nectarinea c. *Ill.*), 339.
Coffea calycina, *Benth.*, 781.
Coffee planting, etc., 679.
Coleoptera, 906.
Colocasia esculenta *Schotti.*, 116.
"Coloured" People, 163.
Coluber pantherinus *Daud.* Tiger-snake, 934.
Columba rufina. *See* Chamaepelia rufipennis.
Columba talpacoti. *See* Chamaepelia t.
Combretum. 260.
Combretum aurantiacum *Benth.* 727.
Combretum laxum *Aubl.* 493, 514.
Commelineae. 623.
Commianthus Schomburgkii *Benth.*, 839.
Compositae. 623, 862.
Comudi. *See* Boa.
Comuti or Taquiari Range. 753.
Conocarpus erectus *Jacq.* 284.
Convolvulaceae. 862, 893.
Convolvulus batatas, *See* Ipomoea b.
Convolvulus guianensis *Aubl.*, 541.
Copaifera pubiflora *Benth.*, 784.
Coracina calva. *See* Gymnocephalus.
Corchorus argutus *Humb. Bonp.*, 852.
Cordia, 154, 541.
Cordia hirsuta *Willd.*, 200.
Cordia Schomburgkii *Benth.*, 200.
Corials, 382, 383, 384.
Coryanthes macrantha *Hook*, 392, 611.
Coryanthes maculata *Hook*, 392, 611.
Cotinga, *See* Ampelis.
Cotinga cayana *Linn.* (Ampelis c. *Linn.*) 495.
Cotton-bird, *See* Muscicapa bicolor.
Cotton-tree, *See* Gossypium.
Couepia comosa *Benth.*, 708.
Couratari guianensis *Aubl.*, 318.

Court-day for the Indians, 601-7.
Coutoubea minor *Humb.*, 541.
Coutoubea ramosa *Aubl.*, 863.
Coutoubea reflexa *Benth.*, 852, 888.
Coutoubea spicata *Aubl.*, 541, 781.
Crab, 575.
Crab-oil, *See* Carapa.
Crax alector *Tem.* Hokko-hen. Powis, 339, 501.
Crax tomentosa, Hokko-hen, *See* Mitua t.
Crenicichla, 808.
Crenicichla lugubris *Heckel*, 652.
Crenicichla saxatillis *Heckel*, 889.
Creole, 162.
Creole Dutch, 161.
Crepuscularia, 886.
Crescentia cujete *Linn*, 455-6, 489, 773.
Crex melampyga, *See* Aramades.
Crex mustelina, *See* Porzana.
Crickets, 69.
Crinum, 300, 392.
Crossing-the-Line on the voyage out, 50.
Crotalaria glabra *Willd.* (?C. retusa *Linn.*), 154, 200.
Crotalaria stipularia *Desr.*, 839.
Crotophaga ani *Linn.* Old Witch, 201.
Crytocarya pretiosa *Mart.*, 943.
Crypturus tao, *See* Tinamus t.
Crypturus variegatus, 339, 353.
Cubaea paniculata *Willd.*, 541.
Cucurbitaceae, 768.
Cullen, Missionary, 617, etc.
Cumaka village and environs, 302-321, 471.
Cuphaea micrantha *Humb. Bonp.*, 888.
Curassawaka Mt., Ascent of, 917.
Curatella, 862, 929 A.
Curatella americana *Linn.*, 820, 839, 854.
Curculia, 336.
Curculionidae, 886.
Currency, 112.
Curua Mission, 858.
Cushy ant, *See* Atta cephalotes.
Custard-apple, *See* Anona squamosa.
Cyanerpes coeruleus *Linn.* (Nectarinia coerulea *Ill.*) Honeybird, 339, 553.
Cyathea aspera *Swartz*, 768.
Cyperus, 839..
Cyrtopodiae, 896.
Cyrtopodium Andersonii, *R. Brown*, 763.

Dacnis cayana Linn. (Sylvia cyanocephala *Lath.*), 339.
Dalton, Miss, 156.
Dance, Music, etc., 407-8.
Dasyprocta aguti *Ill.* Aguti, 204, 418, 782.
Decorations, 553.
Deer, 376.
Deguelia scandens *Aubl.*, 758.
Delphinus delphis, 46.
Demerara River, Arrival at, 56.
Demerara River, Average current of, 61.
Dendrocolaptes guttatus, See Dendrornis guttatoides.
Dendrocygna discolor *Sch.* (Anas autumnalis *Linn.*) 363, 495, 823.
Dendrocygna viduata *Linn.* (Anas v. *Linn.*), Vississi duck, 823..
Dendrornis guttatoides *Lafr.* (Dendrocoloptes guttatus *Licht.*) 339.
Depilation, 322, 592.
Deroptyus accipitrinus *Linn.* (Psittacus a. *Linn.*) Hia-Hia parrot, 326, 777.
Desmanthus, 825.
Desmoncus, 929A.
Desmoncus macroacanthos, 898, 920.
Desmoncus polyacanthos *Mart.*, 789, 898, 920.
Dialium divaricatum *Vahl.*, 701.
Diamond beetle. See Buprestidae.
Dichorisandra aubletiana *Schult.*, 494.
Dicotyles, 787.
Dicromena, 839.
Didelphys, 204, 521, 727.
Dioclea guianensis *Benth.*, 707.
Dioclea lasiocarpa *Mart.*, 707.
Dioscorea alata *Linn.* Yam., 116.
Dioscorea bulbifera *Linn* , 314.
Dioscorea sativa *Linn.* Yam., 116, 314.
Diospyros paralea *Steud.*, 701.
Diptera, 906.
Diseases prevalent in Georgetown, 105.
Dogs, 539, 933.
Dolium fasciatum *Lam.*, 287.
Dolphin, Sea-hog. *See* Delphinus.
Dracontium, 320.
Dracontium dubium *Kth.*, 927.
Drepanocarpus inundatus *Mart.*, 708.
Drinking Feast, 555-61, 568. *See* Intoxicants.
Drum, 482.
Duck, 290.
Duraquarra. *See* Ortalis.

Ear-boring, 445.
Earthenware. *See* Pottery.

East Indians as Immigrants, 92.
Ecclesiastical and Religious Institutions in Georgetown, 142-3.
Echites, 260.
Echites coriacea *Benth.*, 863.
Echites grandiflora *Willd.*, 514.
Echites insignis *Spix.*, 727.
Echites lucida *Humb.*, 514.
Echites macrophylla *Humb.*, 514.
Echlin, Dr., Artist to the Expedition, 211, 275, 347, 373.
Ecphymotes torquatus. *See* Tropidurus.
Education, Indian, 442-4.
Egret, White, 285, 355.
Eichhornia azurea *Kunth.*, 154.
Elanoides furcatus *Linn.* (Falco f. *Linn.*), 319.
Electric Eel. *See* Gymnotus.
Elephantopus angustifolius *Sw.*, 863.
Elisabetha coccinea *Schomb.*, 725, 758.
"Elizabeth" corial, 686, 699.
Emancipation of the Slaves, 86-9, 96.
Emys amazonica (Testudo arrua *Humb.*) *See* Podocnemis expansa.
Emys tracaja *Mart.* (Testudo Terekay *Humb.*) *See* Podocnemis tracaxa.
Entada myriadenia *Benth.*, 893.
Eperua falcata *Aubl.* Wallaba, 494, 639, 701.
Epidendrum, 369, 528, 846.
Epidendrum Schomburgkii *Lindl.*, 300, 763.
Epidendrum umbellatum *Lindl.*, 392.
Erythrina, 65.
Erythrina corallodendron *Linn.* 153, 200, 635.
Erythrina speciosa *And.*, 153.
Erythrinus unitaeniatus *Spix.*, 899, 926.
Escobedia scabrifolia *Ruiz et Par.*, 863.
Essequibo District, Flora of, 707-8.
Essequibo Mouth, Islands at, 648.
Etiquette, Breaches of: by the author, 30.
Eugenia, 541, 623, 743.
Eugenia jambos *Linn.* (Myrtus j. *Humb. Bonp.*), 116.
Eugenia polystachya *Richt.*, 781.
Eugenia Saltzmanni *Benth.*, 758.
Eugenia Schomburgkii *Benth.*, 781.
Eugenia subobliqua *Benth.*, 708.
Eugenia vismiaefolia *Benth.*, 758.
Eunectes. *See* Boa.
Euphone chlorotica, 201.
Euphone rufiventris, 339.
Euphone violacea, 201, 339.
Euphonia cayennensis *Linn.* (Tanagra cayana *Linn.*), 339.
Euphorbia hypericifolia *Linn.* (Phyllanthus h.) 200.

Eupsychortyx Sonnini *Tem.* (Perdix cristata *Lath.*), 864.
Eurotium herbariorum *Link.*, 339.
Eurypyga helias *Ill.* Sun-bird, 353, 501, 939.
Euterpe edulis *Mart.*, 789.
Euterpe oleracea *Mart.*, Cabbage-palm, 116, 300, 351, 502, 529, 581, 898, 910.
Eve Leary Barracks, Georgetown, 100.
Exchange values amongst the Indians, 466.
Exorcism of dancing-ground, 407.
Expedition to Orinoco mouth, Ch. IV.
Exports, Colonial, 118.
Eye Complaints, 325, 446, 510.

Falco cachinnans. *See* Herpetotheres c.
Falco furcatus. *See* Elanoides f.
Falco nudicollis. *See* Ibycter.
Falco sparverius. *See* Cerchneis.
Faramea longifolia *Benth*, 784.
Fauna in Pirara neighbourhood, 864.
Ferns, 318, 320, 519.
Fernandezia, 611.
Ficus, 203.
Fish arrows and lines, 721.
Fish Poisons, 781.
Fish, Whipping for, 721.
Flamingo. *See* Phoenicopterus.
Floating Islands, 356-7.
Flora, Barabara River, 611.
Flora, Barima basin, 514-28.
Flora, lower Essequibo, 707-8.
Flora, Pirara neighbourhood, 862-3.
Flora, Savannah, 854-5.
Florenzo: Schomburgk's boy assistant, 274.
Florida coerulea *Linn.* (Ardea coerulescens *Lath.*) 290.
Florisuga mellivora *Linn.* (Trochilus mellivorus *Linn.*), 312.
Fluvicola pica *Bodd.* (Muscicapa bicolor *Gm.*) Cotton-bird, 201.
Formica clavata. *See* Ponera c.
Fort Frederick William, 99.
Fort Island, 668.
Fort New Guinea, 890.
Four-eye. *See* Anableps.
Fowls and eggs, 943.
Fregata aquila *Linn.* (Tachypetes a. *Vieill.*) Frigate Bird, 54.
Frigate bird. *See* Fregata.
Fryer, Mr.: the gentleman adventurer, 678, 697, 838, 843.
Fulda, 4.
Fusus morio *Lam.*, 287.

Galbula flavirostris, 725.
Galbula grandis. *See* Jacamarops g.
Galeandra Baueri *Lindl.*, 896.
Galeandra junca *Lindl.*, 896.
Gardenia, 65.
Gardenia florida *Linn.*, 152, 218, 640
Gaus, Prof: the Astronomer, 3.
Genipa americana, Lana, 547, 658, 800.
Geological specimens, 924-5.
Geonoma, 789.
Geonoma acutiflora *Mart.*, 898.
Geonoma laxiflora *Mart.*, 898.
Geophagus jurupari *Heckel.*, 889.
Georgetown, Arrival at, 57.
Georgetown, Expenses of living, 70, 114.
Georgetown, General review, 98-120.
Georgetown, Prevailing diseases in, 105.
Georgetown, Social Life, 144, 160.
Gerardia hispidula *Mart.*, 708.
Gesneriae, 923.
Giessen, 4.
"Giraffe," Steamship, 7.
Glascott, Marine-Lieut: 2nd in charge of the Expedition, 31, 566.
Glossophaga sp., 694.
Gluck Island, 718.
Glutton, Big. *See* Tantalus.
Goatsuckers, 720.
Gomphia cardiosperma *DeC.*, 820.
Gomphia glaberrima *Beauv.*, 820.
Gomphrena globosa, 929.
Gongora, 584.
Gongora maculata *Lindl.*, 528.
Gongora nigrita *Lindl.*, 528.
Goodall, Mr: the artist, 670, 774.
Gossypium herbaceum. Cotton-tree, 197.
Goupia glabra *Aubl.*, 318.
Government, Administration of Colony, 121-125.
Granadilla. *See* Passiflora.
Greenheart. *See* Nectandra.
Greenwich Park, Pln., 670, 693.
Grias cauliflora *Linn.*, 116.
Gru-gru. *See* Calandra.
Guaco *Humb. Bonp.*, 756.
Guadua latifolia *Kth.*, 766.
Guatteria ouregou *Dun.*, 701.
Guava. *See* Psidium.
Guettarda, 541.
Guiana, Historical Retrospect of, 75-9.

Guilielma, 248.
Guilielma speciosa, 701.
Gulo, 204.
Gustavia angustifolia *Linn.*, 391.
Gustavia fastuosa *Willd.*, 518, 825.
Gustavia pterocarpa *Poit.*, 831.
Gustavia urceolata *Poit.*, 825.
Gypagus papa *Linn.* Vultur papa *Linn.* King Vulture, 985-9.
Gymnocephalus calvus *Gm.* (Coracina calva *Tem.*) Capuchin bird, 900.
Gymnotus electricus. Electric eel, 371.

Habenaria longicauda *Hook.*, 893, 896.
Hair-cutting, 447, 598, 910.
Halieus brasilianus. *See* Phalacrocorax.
Hamlet, the cook, 309.
Hancock, Mr: the Secretary, 31, 677.
Hebu, Yawahu, etc., 453-7.
Hector protesilaus, 241.
Heliconiae, 311, 846, 898.
Helicteres althaeifolia *Lam.*, 839.
Helicteres guazumaefolia *Humb. Bonp.*, 781, 863, 893.
Hemicarpha, 839.
Hemiptera, 336.
Henriettea succosa *DeC.*, 541.
Herodias egretta *Gmel.* (Ardea leuce. *Ill.*), 290, 864.
Herons, 337.
Herpestes gratioloides *Benth.*, 888.
Herpetodryas lineatus *Schleg.*, 569.
Herpetotheres cachinnans *Linn.* (Falco c. *Linn.*), 864.
Heteranthera reniformis *Ruiz.*, 356.
Hia-Hia Parrot. *See* Psittacus accipitrinus.
Hibiscus, 893.
Hibiscus bicornis *Meyer*, 200, 725.
Hibiscus Brasiliensis *Linn.*, 200.
Hibiscus chinensis. *See* H. mutabilis.
Hibiscus esculentus *Linn.* Ochro, 116.
Hibiscus mutabilis *Linn.* (H. chinensis), 65.
Hibiscus rosa sinensis *Linn.*, 65, 152.
Hibiscus spinifex *Linn.*, 200.
Hieroglyphics. *See* Picture-writing.
Hippomane manicella *Linn.*, 707.
Hirtella, 854, 903.
Hirtella eriandra *Benth.*, 707.
Hirtella paniculata *Swartz.*, 707.
Hirtella racemosa *Lam.*, 514, 541.
Hirtella rubra *Benth.*, 839, 863.
Hirundo fasciata. *See* Atticora f.
Hobo-hit, 405.

Hokko-hen. *See* Crax.
Holoquiscalus lugubris *Sw.* ? (Icterus sericeus), 201.
"Home," schooner, 277, 286.
Honey-bird. *See* Nectarinia coerulea.
Horse-Racing. *See* Turf Club.
Hospitals in Georgetown, etc., 100, 104, 635, 678.
Houses, Indian, 430, 529.
Howler monkey. *See* Mycetes.
Huiya. *See* Lacis.
Humboldt, Alex. v.; Scientist and traveller, 48.
Humirium floribundum *Mart.*, 813, 918.
Humming birds, 27, 301, 355.
Huntleya violacea *Lindl.*, 763.
Hura crepitans *Linn.*, 218.
Hurua. *See* Pithecia chiropodes.
Hutu-Hutu. *See* Prionites momota.
Hydranassa tricolor *Mull.* (Ardea leucogaster *Wagl.*) 290.
Hydrochaerus Capybara. Water-hass, 823, 904.
Hydrocynis Cuvieri *Agass.* (Xiphostoma C. Spix), 808.
Hymenaea Courbaril *Linn.*, 318, 547, 918.
Hymenophyllum polyanthos *Swartz.*, 768.
Hypolytrum, 839.
Hyptis Parkerii *Benth.*, 708.
Hyptis, recurvata *Poit.*, 708.
Hyptis spicata *Poit*, 708.

Ibis albicollis. *See* Theristicus.
Ibis nudifrons *Spix.*, 846.
Ibis, Red, 285, 293, 355.
Ibycter Americanus *Bodd.* (Falco nudicollis *Daud.*), 319, 864.
Ice-ships, 117.
Icica altissima. *See* Protium altissimum.
Icterus guianensis. *See* Leistes.
Icterus icterocephalus *Daud.* *See* Agelaeus.
Icterus sericeus. *See* Holoquiscalus.
Icterus xanthornis *Linn.* Plantain bird, 201,243.
Iguana tuberculata *Laur.*, 717.
Ilamikipang Mt., Ascent of, 937-953.
Immigration, 914.
Indians, In Georgetown, 188-9.
Indians, Protection of, 131, 190-3.
Indians, Future of, 194.
Indians. Introduced diseases, 195.
Indians' dislike of Negroes, 164.
Inga floribunda *Benth.*, 707, 758.
Inga platycarpa *Benth.*, 707.
Inga sapida *Humb. Bonp.*, 707.

Intoxicants, 461-2. *See* Drinking Feast, Cassiri, Maize, Paiwari, Ite, Potato-Drink, etc.
Intoxication, Indian Cure for, 483-4.
Ionopsis teres, 392.
Ipomoea batatas *Poir* (Convolvulus b.) Potato, 116, 314, 439.
Irai-i, Carib Chief of Waraputa, 736.
Iriartea ventricosa *Mart.*, 898, 920.
Iron-stone, 302.
Isertia coccinea *Vahl.*, 541.
Islands, Floating, 356-7.
Islands, Floating at Essequibo Mouth, 648.
Islas Ipomucena, 862.
Isolepsis, 839.
Itaballi Cataract, 708.
Itabbos, 568.
Ite Palm, *See* Mauritia flexuosa.
Ixora, 65.
Ixora coccinea *Linn.*, 153.

Jacamarops grandis *Gm.* (Galbula g. *Lath.*) 725.
Jacana spinosa *Linn.* (Parra jacana *Linn.*), 201, 642.
Jacaranda procera *Spr.*, 153, 725.
Jacaranda rhombifolia *Meyer*, 153.
Jaguar, 204, 929.
Jan or Yan, Chief of Arawaks and Warraus at Ascura, 412-6.
Janipha Loefflingii. *See* Manihot Carthagenensis.
Janipha manihot, *See* Manihot utilissima.
Jasmine, 65.
Jasminium grandiflorum, 152.
Jonidium oppositifolium *Schult.*, 781.
José dos Santos Innocentes, Friar, 868.
Jungermanniae, 320, 528.
Jussiaea affinis *De C.*, 784.
Justice, Administration of. Colonial, 126-30, 132.
Justicia, 65.
Justinia coccinea *Aubl.*, 494.

Kabaura, *See* Simulia.
Kaiman, 778, 780. *See* Alligator.
Kaitan, Carib Settlement, 657-8.
Kanaima, 744-6.
Karatas Plumieri Morr. Bromelia Karatas, 438.
Kew Gardens, London, 25.
King, Mr., Superintendent Barima and Essequibo District, 246, 275, 372.
King Vulture, *See* Vultur papa.
Koch, Dr.: of Nürnberg, 209.
Kyffhäuser, Range of Hills in Thuringia, Germany, I.

Kyk-over-all Island, 654.
Kyllingia, 839.

Laba, *See* Coelogenys paca.
Labaria, *See* Lachesis.
Lachesis atrox *Linn.* (Trigonocephalus a. *Schleg.*) Labaria, 371, 409, 669, 738.
Lacis fluviatilis *Willd.* Huiya, Weyra, 710, 762.
Laguncularia racemosa *Gaertn.* 57, 284.
Lampornis gramineus *Gm.* (Trochilus pectoralis *Linn.*) 201.
Lampornis violicauda *Bodd.* (Trochilus mango *Linn.*) 312.
Lampyris phosphorea, *See* Aspidosoma maculatum.
Lana. *See* Genipa.
Language, Notes on, 596, 659.
Lantana camara *Linn.*, 154.
Larus, 778.
Laulau, 721.
Laurineae, 304, 318.
Leal, Captain: of Fort St. Joaquim, 868.
Lecythis, 318, 914.
Lecythis parviflora *Aubl.*, 494.
Leguminosae, 304, 318, 862.
Leistes guianensis *Linn.* (Icterus guianensis *Briss.*) 201.
Lemon Trees, 488.
Leonotis nepetaefolia *R. Br.*, 154, 200.
Leopoldinia, 248, 351, 355, 581.
Leopoldinia pulchra *Mart.*, 300.
Leper Hospital, 635.
Lepidocaryum gracile, 581, 898.
Lepidoptera 886, 906.
Leporinus fasciatus *Müll Trosch.* 889.
Leptolobium nitens *Vogel*, 708.
Letter-wood, *See* Piratinera.
Leucophoyx candidissima *Gm.*, (Ardea nivea *Lath.*) 201, 290.
L'heureuse Aventure, Pln., 678.
Liberadiña, Senora, 872.
Licania aperta *Benth.*, 784.
Licania coriacea *Benth.*, 707.
Licania divaricata *Benth.*, 707.
Licania floribunda *Benth.*, 784.
Licania pendula *Benth.*, 888.
Lichens, 318.
Light, Governor, 145.
Lighthouse Tower, Georgetown, 63, 100.
Limnanthemum Humboldtianum *Griseb*, 888.
Limnocharis Humboldtii *Rich.*, 154.
Lindley, Prof.: the Botanist, 26.
Lindsaya crenata *Klotzsch*, 768.

Lindsaya divaricata *Klotzsch,* 768.
Lindsaya dubia *Spreng,* 768.
Lindsaya gracis *Klotzsch,* 768.
Lindsaya moritziana *Klotzsch,* 768.
Lindsaya pendula *Klotzsch,* 768.
Lindsaya Raddiana *Klotzsch,* 768.
Lindsaya reniformis *Dryand,* 768.
Lindsaya Schomburgkia *Klotzsch,* 768.
Lindsaya stricta *Dryand,* 768.
Lindsaya trapeziformis *Salisb,* 768.
Lisianthus coerulescens *Aubl.,* 320, 494.
Lisianthus gracilis *Griesb.,* 725.
Lisianthus grandiflorus *Aubl.,* 541.
Lizard Eggs, etc., *See* Iguana.
Loddiges: his Collection of Humming Birds, etc., 27.
Lonchocarpus densiflorus *Benth.,* 781, 889.
London, 18, 19.
Loranthus guianensis *Kl.,* 825, 852.
Loranthus Smithii, *Schomb.,* 825.
Loranthus theobromae *Willd.* (L. uniflorus *Linn.*), 644.
Loranthus uniflorus, *See* L. theobromae.
Loricaria cataphracta *Linn.,* 822.
"Louise," Corial of Expedition, 686, 699.
Luganani. *See* Cichla ocellaris.
Lutra brasiliensis *Ray,* Water-dog, 770.
Lutra enudris *Cuv.,* Water-dog, 770.
Lygodium volubile *Swartz,* 768.
Maam. *See* Tinamus.
Mabea pirini *Aubl.,* 541.
McClintock, the Postholder, 630-3, 881.
Machaerium leiophyllum *Benth.,* 707.
Machaerium nervosum *Vogel,* 707.
Machaerium Schomburgkii *Benth.,* 831, 839.
Macrolobium bifolium *Pers.,* 701.
Macrolobium sphaerocarpum *Willd.,* 541, 701.
Macusi, 800-2.
Macusi Burial Ceremonies, 908-911, 996-7.
Mahu and Rupununi, Watershed between, 892.
Maicerwari. *See* Murder charge.
Maiongkong, 879-80.
Maipuri. *See* Tapir.
Maize, 116, 315.
Maize, drink, 462.
Majeta guianensis, 541.
Malanea sarmentosa *Aubl.,* 707.
Malpighiaceae, 260, 862.
Malvaceae, 623, 862.
Mammea americana *Linn.,* Mamee Apple, 116.
Manari, 644.

Manicaria, 351.
Manicaria saccifera *Gaertn.* Truli palm, 248, 300, 302, 320, 638.
Manihot carthagenensis *Muell.* (Janipha Loefflingii. *Humb. Bonp.*), Sweet Cassava, 116.
Manihot utilissima *Pohl.* (Janipha manihot *Humb. Bonp.*) Bitter Cassava, 116, 304, 314-7, 330-1, 529.
Mangifera indica *Linn.* Mango, 68, 116.
Mango. *See* Mangifera.
Mantle, Feather, 553.
Marantaceae, 311, 320.
Maranta arundinacea *Linn.* (M. indica *Rosc*), Arrowroot, 116.
Maranta indica. *See* M. arundinacea.
Maranta ramosissima. *See* Clinogynê.
Marawari. Warrau Chief of Honobo, 483-91, 573-4.
Marcgravia, 494.
Mar de aguas blancas, 862.
Marginella coerulescens *Lam.*, 287.
Mariscus, 839.
Markets in Georgetown, Fruit and Vegetable, 116.
Markets in Georgetown, Meat and Fish, 113-5.
Marmoset. *See* Callithrix.
Marriage, Early, 323, 432-3.
Marryat's mother, Captain, 28.
Martia excelsa *Benth.*, 725.
Marudi. *See* Penelope.
Master of the Ceremonies, 558.
Matamata. *See* Chelys.
Mauritia, 892-4.
Mauritia flexuosa *Linn.* Ite palm. "Tree of Life," 463, 527, 810.
Maxillaria, 301, 369, 528, 584.
Maxillaria chlorantha *Bot. Reg.*, 611.
Maxillaria cristata *Lindl.*, 392.
Maxillaria foveata *Lindl.*, 611.
Maxillaria graminea *Lindl.*, 611.
Maxillaria porrecta *Bot. Reg.*, 611.
Maxillaria pumila *Hook*, 611.
Maxillaria parkerii *Hook*, 611.
Maxillaria steelii, 696.
Maxillaria unciata *Bot. Reg.*, 611.
Maximiliana, 248, 351, 581, 789.
Maximiliana regia *Mart.*, 320, 701, 801, 898, 914, 928, 930.
Mazama americana (Capreolus rufus) 537.
Mazama simplicicornis (Capreolus s.), 537.
Mazaruni mouth, 654.
Meals, Warrau, 431.
Meat, Smoked, 430.
Medicine-man, 452-9, 921-2.
Meidinger, H. Author of Travels in Great Britain and Ireland, 4.
Melastoma, 260, 623, 854, 893.

Meliaceae, 65, 304.
Melicocca bijuga *Linn.*, 115.
Melochia arenosa *Benth.*, 708.
Melochia graminifolia *St. Hil.*, 888.
Melochia zanceolata *Benth.*, 708.
Melvilla *Lindl.*, 888.
Menstruation, 447-8.
Mertensia pectinata *Willd.*, 768.
Meteorological data, 565, 566, 653, 682-3.
Mica schist, 302.
Miconia (Melastoma *Aubl.*) alata *DeC.*, 541.
Miconia attenuata *De C.*, 541.
Miconia brevipes *Benth.*, 893.
Miconia ciliata *De C.*, 863.
Miconia elata *Benth.*, 541.
Miconia laevigata *Benth.*, 541.
Miconia longifolia, 541.
Miconia purpurescens, 541.
Miconia racemosa, 541
Miconia Schomburgkii *Benth.*, 863.
Mikania denticulata *DeC.*, 756.
Mikania racemulosa *Benth.*, 756.
Military Expedition, Arrival of: at Pirara, 847.
Mimosa, 154, 200, 260, 358, 743, 854.
Mimosa floribunda *Willd.*, 893.
Mimosa guianensis *Aubl.*, 318.
Mining Claims, Old Dutch, 660.
Minquartia guianensis *Aubl.*, 701.
Missions to Indians. See Bartika Grove, Caria-Caria, Curua, Morocco,
Pirara, Pomeroon. Waraputa.
Mitua tomentosa *Spix* (Crax t. *Spix*) Hokko-hen, 904.
Mocking-bird. *See* Cassicus perseus.
Monacha nigra *Mull* (Bucco cinereus *Gm.*) 747.
Monachanthus, 922.
Monachanthus discolor *Lindl.*, 392.
Monachanthus viridis *Lindl.*, 896.
Monkey, Howler. *See* Mycetes.
Monnieria trifolia *Linn.*, 541.
Montrichardia aculeatum *Crueg* (Caladium arborescens *Vent.*) Mucu-Mucu, 300, 639, 642, 670.
Mora Creek, 298-9.
Mora excelsa *Benth.*, 515, 517, 701, 725.
Morality, 461.
Morocco Mission, 617.
Morocco River, 616.
Morocotu. *See* Myletes sp.
Mosquitoes, 70, 343, 353, 359-61, 632-3.
Mosses, 318.
Mould in Collections, etc. *See* Eurotium.

Mucu-Mucu. *See* Caladium arborescens.
Mud banks on Coast, 629.
Mud-swimming, 293, 364.
Mugil sp. Querimanni, 367-8.
Mulatto and its mixture, 163-70.
Murder Charge, 419-28, 470.
Musaceae, 311, 320, 947.
Musa Cavendishii *Paxton*, 229, 951
Musa chinensis *Sweet*, 229, 944.
Musa paradisiaca *Linn.* Plantain, 62, 116, 227-9, 304.
Musa paradisiaca *Linn.* disease, 231-2.
Musa sapientum. Banana, 68, 116, 229, 304, 920.
Muscicapa bicolor. *See* Fluvicola pica.
Muscicapa coronata. *See* Muscivora regia.
Muscicapa leucocephala. *See* Arundinocola.
Muscicapa tyrannus *Linn.*, 864.
Muscivora regia *Gm.* (Muscicapa coronata *Linn.*), 864.
Music. *See* Dance, Drum, Rattle, Reed-instruments, Violin.
Muscovy duck. *See* Anas moschata.
Myanthus, 611.
Myanthus barbatus *Lindl.*, 392.
Myanthus deltoides *Lindl.*, 392.
Mycetes seniculus, Howler-monkey, 353, 537-8, 681.
Mycteria Americana *Linn.*, 819, 864, 887, 893.
Myletes sp. Morocotu. Osibu. 367, 569.
Myletes latus *Müll Trosch*, 808.
Myletes pacu. *See* Myleus.
Myletes rubripinnis *Müll Trosch.*, 889.
Myleus pacu *Sch.* (Myletes p. *Jard.*), 710-2, 762.
Myleus setiger *Müll Trosch.*, 889.
Myristica sebifera *Sw.*, 541.
Myrmecophaga jubata *Linn.*, Giant Ant-eater, 394.
Myrodia longiflora *Sw.*, 541.
Myrtaceae, 893, 939.
Myrtus jambos. *See* Eugenia j.
Myrtus Shomburgkii *Klotzsch.*, 893.

Naikuripa Island, 656.
Nappi Village, 901.
Nasua., Kibihi, 204, 727.
Natica morochiensis *Lam.*, 287.
Natterer, Dr., Austrian traveller and naturalist, 26.
Navel-string, 438.
Nectandra Rodiei *Schomb.*, Greenheart, 529.
Nectarinia coerulea. See Cyanerpes.
Nectarinia cyanea. *See* Coereba.
Negro, The. Characteristics of, 171-8, 185-6.
Negro Diseases, 187.

Negro obstinacy, 574.
Nemosia nigrigula ? (Tanagra nigerrima *Gm.*), 201, 339.
Neurocarpum longifolium *Mart.*, 863.
Neurophyllum pinnatum *Presl.*, 768.
Newspapers, Georgetown, 108.
Norantea guianensis *Aubl.*, 391, 494, 708, 725.
Nose-boring, 445.
Nucula rostrata, 287.
Number, Computation of, 465.
Numenius, 290, 778.
Nymphaea, 614, 616, 642.

Oak of the Tropics. *See* Mora excelsa.
Ochre, 302.
Ochro, Hibiscus esculentus, 116.
Odontophorus guianensis *Gm.* (Tetrae g.), 543.
Oenocarpus bacaba *Mart.*, Turu, 320, 581, 937, 934.
Oenocarpus batana, Turu, 898, 928, 934.
Oenocarpus minor, 898.
Oleander, 65, 640.
Oncidium Baueri *Lindl.*, 300, 392.
Oncidium iridifolium *Humb. Kth.*, 369, 392, 611.
Oncidium lanceanum *Lindl.*, 392, 611.
Oncidium lunatum *Lindl.*, 392.
Ophiocaryon paradoxum *Schomb.*, Snake-tree, 696.
Orange, 65, 116, 153, 200, 488.
Orchids, 318, 392, 519.
Oreodoxa oleracea *Mart.* (Areca oleracea *Jacq.*), Cabbage Palm, 57, 64-5, 116, 151, 248.
Orinoco, Expedition to mouth of, Ch. IV.
Oriole, 355.
Ortalis motmot *Linn.* (Pionites momota *Ill.*) Hutu-hutu, Hanaqua, Duraquara, 355, 542-3.
Osibu. *See* Myletes sp.
Osprey. *See* Halieus, Carbo.
Osteoglossum bicirrhosum *Spix.*, Arowana, 808, 889.
Osterbecke Point, 702.
Ostinops decumanus *Pall.* (Cassicus niger *Daud.*), 201.
Otter. *See* Lutra.
Ouropocari Falls, 757-8.
Outea acaciaefolia *Benth.*, 725.
Owen, Professor, 24.

Pacaraima Range, 855.
Pachira aquatica *Aubl.* (Carolinea princeps *Linn.*), 260, 494.
Pacu. *See* Myletes.
Pacu nigricans *Spix.*, 889.
Paepalanthus capillaceus *Klotzsch.*, 839

Paiwari, 462.
Pakaruima. *See* Phractocephalus.
Papilionaceae, 358.
Parivoa grandiflora *Aubl.*, Wallaba, 639, 701.
Paroaria gularis *Linn.* (Tanagra g. *Linn.*), 725.
Parra jacana. *See* Jacana.
Parrots, 355.
Parson-bird. *See* Muscicapa eucocephala.
Passiflora, Passion Flower and Fruit, 65, 260, 300, 514, 863, 919.
Passiflora coccinea, 391.
Passiflora edulis (Probably an error for P. maliformis ? *Linn.*) Simitu. Passion Fruit, 116.
Passiflora laurifolia *Linn.*, Simitu. Passion Fruit, 116.
Passiflora quadrangularis *Linn.*, Granadilla, 116.
Pavonia cancellata *Car.*, 888.
Pavonia speciosa *Humb. Bonp.*, 863.
Pavonia typhalaea *Car.*, 725.
Paw-Paw. *See* Carica papaya.
Pectis elongata *Humb Bonp.*, 781.
Pekea tuberculosa *Aubl.* (Caryocar tomentosum *Willd.*) Sawari Nut. 650, 694.
Peltogyne paniculata Benth., 893.
Penal Settlement, 657.
Penelope cristata *Tem.* *See* P. jacupeba.
Penelope jacucaca *Spix* (P. parraca *Tem.*), 339.
Penelope jacupeba *Spix.* (P. cristata *Tem.*) Hokko-hen. Yaku, 339, 355, 501.
Penelope parraca. *See* P. jacucaca.
Penelope pipile. *See* Pipele.
Pepper-eater. *See* Rhamphastidae.
"Pepper-Pot," 330.
Perdix cristata. *See* Eupsychortyx.
Peristeria pendula *Hook.*, 392.
Persea gratissima *Gaert.* Avocado Pear, 116, 200.
Petasophora delphinae Less. (Trochilus petasophorus *Pr. Max.*), 312.
Peters, Rev.: of Caria-Caria Mission, 267, 271.
Petrea, 260.
Petrea macrostachya *Benth.*, 784, 831.
Petrea volubilis *Linn.*, 391, 727.
Petrocarya campestris *Willd.*, 701, 763.
Petrocarya coriacea *Benth.*, 763.
Petrocarya montana *Willd.*, 701.
Phaenicocercus carnifex *Linn.* (Ampelis c.), Fire-bird, 905.
Phaenicopterus ruber. Flamingo, 285, 290, 293.
Phaethornis ruber *Linn.* (Trochilus pymaeus *Spix*), 312.
Phalacrocorax brasilianus (Halieus b. *Ill.*). Osprey, 703.
Phaseolus lasiocarpus *Mart.*, 725.
Phaseolus linearis *Humb. Bonp.*, 839.

Phractocephalus bicolor. *See* P. hemilopterus.
Phractocephalus hemilopterus *Bloch* (P. bicolor *Agass.*), 721, 771, 832.
Phyllanthus conami. *Sw.*, 781.
Phyllanthus hypericifolia. *See* Euphorbia h. conami
Phyllanthus niruri, 200.
Phyllostoma spectrum. Vampire. 694, 695.
Physalia utriculus, 49.
Phytolacca, 541.
Phytolacca decandra *Linn.* Spinach, 116.
Piai, Piatsang, Paché, etc. *See* Medicine man.
Piapoco. *See* Toucan.
Pickersgill, 640.
Picture-writings, 739-742.
Pigeon. *See* Columba, etc.
Pigeon Pea. *See* Cayanus.
Pine-apple. *See* Ananas.
Pionites melanocephalus *Linn.* (Psittacus m. *Linn.*), 313.
Pionites momota. *See* Ortalis.
Pionus maximiliana *Linn.* (Psittacus m. *Kuhl.*), 203.
Pionus monstruus *Linn.* (Psittacus m. *Linn.*), 203.
Pipile cumanensis *Gm.* (Penelope pipile *Lath.*), 339.
Pipra, 923.
Pipra auricapilla *Licht.*, 572.
Pipra leucocilla *Linn.*, 572.
Pirai. *See* Pygocentrus, Pygopristis, Serrasalmo.
Pirara. Fauna, 864.
Pirara. Flora, 862-3.
Pirara Mission, 252.
Piratinera guianensis *Aubl.* (Brosimum Aubleti *Poep. Endl.*) Letter-wood, 918.
Pitangus lictor *Licht.* (Tyrannus l.), 201.
Pitangus sulphuratus *Linn.* (Tyrannus s. *Vieill.* Tyrannus flavus). Que'st-ce-que-dit, 64, 201.
Pitcairniae, 922, 943.
Pithecia chiropodes *Geoff.* Hurua monkey, 788.
Pithecia leucocephala. *See* P. pithecia.
Pithecia pithecia *Linn.* (P. leucocephala), 788.
Pithecolobium pubescens *Benth.*, 784.
Pithecolobium trapezifolium *Benth.*, 707.
Plaiting, 599.
Plantain. *See* Musa paradisiaca.
Plantain bird. *See* Icterus xanthornis.
Plantain disease, 231-2.
Platalea ajaia *Linn.* Spoon-bill, 285, 290.
Platystoma tigrinum *Val.* Tiger Fish, 758.
Pleurothallis, 611, 939.
Plotus, 759, 778, 846.
Plotus anhinga *Linn.* Snake-bird. Snake-neck, 298, 725.

Plumieria mollis. *Humb. Bonp.*, 839.
Podiceps, 887.
Podocnemis expansa *Schw.* (Emys amazonica *Mart.*), 716.
Podocnemis tracaxa *Spix* (Emys tracaja *Mart.*), 716.
Podostemeae 710.
Poinciana, 65, 218.
Poinciana pulcherrima *Linn.*, 152.
Police chase, 687.
Polyborus caracara. *See* P. cheriway.
Polyborus cheriway *Jacq.* (P. caracara *Spix*), 854, 864.
Polygala, 893.
Polygala angustifolia *Humb. Bonp.*, 863, 888.
Polygala appressa *Benth.*, 852, 888.
Polygala camporum *Benth.*, 863.
Polygala galicides *Poir.*, 863.
Polygala hygrophylla *Humb. Bonp.*, 808.
Polygala longicaulis *Humb. Bonp.*, 852, 863.
Polygala mollis *Humb. Bonp.*, 863.
Polygala variabilis *Humb. Bonp.*, 852, 888.
Polygamy, 432-3, 598.
Pomeaco, 640.
Ponera clavata. Formica c. Biting Ant, 343.
Pomeroon Mission, 640.
Pomeroon Mouth, 634.
Population statistics, Colonial, 97.
Porphyrio martinica. *See* Porphyriola m.
Porphyriola martinica *Linn.* (Porphyrio m.), 201.
Portuguese Immigrants, 92-3.
Portuguese "Man-of-War," 49.
Porzana albicollis *V.* (Crex mustelina), 201.
Posoqueria longiflora *Aubl.*, 623.
Potato. *See* Convolvulus batatas.
Potato drink, 462.
Pothos, 320.
Pottery, 449, 599, 659.
Powis. *See* Crax. *sp.*
Procyon, 204.
Property of Deceased, 615.
Protium altissimum *March* (Icica altissima *Aubl.*), 383.
Psidium, 200, 743, 768, 862.
Psidium aquaticum *Benth.*, 772, 825.
Psidium aromaticum *Aubl.*, 772, 825.
Psidium pomiferum *Linn.* Guava, 116, 203.
Psidium pyriferum *Linn.* Guava, 116, 200, 203.
Psittacula guianensis *Spix.* (Psittacus gregarius *Spix*), 201.
Psittacula passerinus *Linn.* (Psittacus p. *Linn.*), 201-2.
Psittacus accipitrinus. *See* Deroptyus.
Psittacus aestivus. *See* Amazona aestiva.
Psittacus ararauna. *See* Ara a.

Psittacus gregarius. *See* Psittacula guianensis.
Psittacus macao. *See* Ara m.
Psittacus makawuanna *Linn.*, 642.
Psittacus maximiliana. *See* Pionus m.
Psittacus monstruus. *See* Pionus m.
Psittacus nuchalis *Linn.*, 313.
Psittacus passerinus. *See* Psittacula p.
Psittacus pulverulentus. *See* Amazona farinosa.
Psittacus taipara. *See* Brotogerys.
Psophia crepitans *Linn.* Trumpet-bird [Warracabra], 501, 782, 904.
Psychotria, 541.
Psychotria violacea *Aubl.*, 320
Pteroglossus piperivorus. *See* Selenidera.
Pteroglossus viridis, 338.
Pulex penetrans. Chigoe, 325, 340-2.
Punica, 65.
Punishment, Corporal, 444.
Purpura cataracta *Lam.*, 287.
Pygocentrus. Pirai, 808.
Pygocentrus niger, 754.
Pygocentrus piraya, 754.
Pygopristis denticulatus *Cuv.* (P. fumarius *Müll. Trosch*). Pirai, 754.
Pygopristis fumarius. *See* P. denticulatus.
Pyrophorus pellucidus *Esch.*, 353.
Pyrula melongena *Lam.*, 287.

Quassia, 65.
Quassia amara. Bitter Ash, 667.
Quayé River, 896.
Querimanni. *See* Mugil sp.
Querula cruenta *Bodd.* (Ampelis rubricollis *Tem.*), 495.
Qu'est-ce-que-dit? *See* Tyrannus sulphuratus.

Rain. Certain beliefs, 504, 509.
Rainy Season, Commencement of, 334.
Rapateae, 846, 898.
Rapatea paludosa *Aubl.*, 320.
Rappu bambu, 766.
Rattle, 407, 455-8.
Ravenala guianensis *Rich.*, 720.
Razor grass, 937.
Reading and Writing, 885.
Reed instruments, 405.
Religious Institutions, Colonial, 142-3.
Rhamphastidae. Big-bill. Bill-bird. Pepper eater. Piapoco. Toucan, 337-8, 355, 553.
Rhamphastus erythrorhynchus *Linn.*, 338, 879.
Rhamphastus toco, 338, 864.

Rhamphastus vitellinus *Linn.*, 338, 879.
Ramphocoelus jacapa *Linn.* (Tanagra j. *Gm.*), 201, 339.
Rheumatism. Ant-bites for, 343.
Rhizoboleae, 304.
Rhizophora, 350-1.
Rhizophora mangle *Linn.*, 57, 284.
Rhynchanthera dichotoma *DeC.*, 614.
Rhynchophorus palmarum (Calandra p.). Gru-gru, 500.
Rhynchops. Scissor-bill, 290, 725, 759, 778.
Ricinus communis, 541.
Ring, The: Afternoon Promenade, 154-155.
Ritchie: the Customs Officer, 39.
Rocks, Primitive, 566.
Rodriguezia, 301, 584.
Rodriguezia secunda *Humb.*, 528.
Rodriguezia stricta *Steud*, 528.
Ropourea guianensis *Aubl.*, 541.
Rose, monthly, 65.
Rose of the Tropics. *See* Brownea racemosa.
Ross, Miss: the Georgetown beauty, 156, 213-7.
Rothwell, Captain: of the Cleopatra, 33.
Rötscher, the mineralogist, 29.
Rucu, Bixa orellana, 522, 547, 658.
Ruellia tuberosa, 154, 200.
Rupicola rupicola *Linn.* (R. aurantia *Vieill.*) Cock-of-the-Rock, 891, 923, 941-2.
Rupununi River, 766.
Rupununi and Rio Negro watershed, 862.
Rüppel, Prof., 4.
Ruyschia surubea *Sw.*, 300.

Sackawinki monkey. *See* Callithrix.
Sacky, Blue and Brown. *See* Tanagra sayaca and olivascens.
Sago, 463.
Saimiri sciureus *Linn.* (Callithrix sciurea). Sackawinki, 353, 759.
Salad, 116.
Salempores, 658.
Saltator magnus *Gm.* (Tanagra magna *Linn. Gm.*), 201.
Salutation, 306, 499, 523, 555, 804, 892.
Sandbank at Waini mouth, 286-96.
Sandpipers, 290.
Sanitary Police, 98, 120.
Sapodilla. *See* Achras.
Savannah Fires, 809-11, 827.
Savannah Flora, 854-5
Sawari-nut. *See* Pekea.
Sawari-palm. *See* Astrocaryum Janari.
Saxically Rock, 251.
Schizaea elegans *Swartz*, 768.

Schizaea flabellum *Mart.*, 768.
Schizaea trilateralis *Schk.*, 768.
Schizodon fasciatus *Agass*, 889.
Schnella rubininosa *Benth.*, 784.
Schnella splendens *Benth.*, 784.
Schomburgkia crispa, 846.
Schooner, derelict, 582.
Schousboea, 260.
Schübleria coarctata *Benth.*, 863.
Schultesia brachyptera *Chmss.*, 852.
Schultesia stenophylla *Mart.*, 852.
Sciadeichthys mesops *Cuv.* (Bagrus m.), 365-6.
Scientific Societies, Colonial, 109.
Scissor-bill. *See* Rhynchops.
Scitamineae, 320.
Scleria, 839.
Scleria flagellum, 842, 852.
Scolopax, 290.
Scomber thynnus. Tunny, 51.
Scoparia dulcis *Linn.*, 863.
Sea-Swallow. *See* Sterna.
Sea-weed. Experiments with, 48-9.
Securidaca, 260.
Securidaca latifolia *Benth.*, 863.
Securidaca marginata *Benth.*, 727.
Securidaca pubiflora *Benth.*, 863.
Securidaca volubilis *Linn.*, 241, 391.
Segrae sessiliflora *DeC.*, 541.
Selenidera piperivora *Linn.* (Pteroglossus piperivorus), 338.
Serrasalmo aureus *Spix.* Pirai, 754, 808.
Sesbania grandiflora *Poir* (Aeschynomene coccinea *Linn.* A. grandiflora *Linn.*), 153.
Sheep 245
Shelter-sheds, 575, 577.
Shield. *See* Wrestling.
Shillinglaw. Mr., 16.
Ship-Building, Timbers for, 701.
Shirts, Bark, 880.
Sick people neglected, 592-3.
Sideroxylum inerme *Linn.*, 701, 918.
Simitu. *See* Passiflora.
Simulia. Kabaura, etc., 777.
Sipanea dichotoma *Humb. Bonp.* 888.
Siparuni River, 754.
Siphonia elastica *Pers.*, 541.
Slaves, Emancipation of, 86-89, 96.
Slaves, Revolt of, 80-84.
Sleeping Disease, 917.
Sloanea sinemariensis *Aubl.*, 701.

Sloth. *See* Bradypus.
Small-pox, 621-2, 675, 678.
Smith, Rev. John, 85.
Smyth's Place, near Waraputa, 729.
Snake-bird. *See* Plotus.
Snake-tree. *See* Ophiocaryon.
Snake, Two-headed. *See* Coecilia.
Snipe, 290.
Solanum, Solaneae, 541, 623
Solanum erythrocarpum *Meyer*, 200.
Solanum mammosum *Linn.*, 200.
Solanum verbascifolium, 200.
Songs, Dance, etc., 558.
Sophienburg, Pln., 648.
Sororeng, 732 *et seq.*
Soursop. *See* Anona muricata.
Spamann, Mr., 246.
Spanish Arawaks, 618-20.
Spanish "launches." *See* Corials.
Spennera aquatica *Mart.*, 320, 781.
Spennera circaeifolia *DeC.*, 781.
Spennera dichotoma *Benth.*, 725.
Spennera disophylla *Benth.*, 725, 758.
Spennera latifolia *Benth.*, 725.
Spermacoce, 494, 541.
Spigelia Schomburgkiana *Benth.*, 753.
Spinach. *See* Cleome. Phytolacca.
Spondias, 931.
Spondias lutea, 898.
Spoon-bill. *See* Platalea.
Stachytarpheta jamaicensis *Vahl.*, 154, 200.
Stanhopea, 584.
Stanhopea grandiflora *Lindl.*, 528.
Staples, Major: in connection with Artesian Wells, 133.
Steam-bath, 917.
Stemodia foliosa *Benth.*, 863.
Sterculia Ivira, 863.
Sterna magnirostris *Licht.*, Sea-Swallow, 725.
Stöckle; Schomburgk's "handy-man," 274, 366.
Stone-marrow, 302.
Strings for Counting. *See* Time, Computation of.
Strychnos toxifera *Schomb.* Urari, 891, 939-40.
Sturnella Ludoviciana. *See* S. magna.
Sturnella magna *Linn.* (S. Ludoviciana), 864, 887.
Stutchbury, Mr., 67.
Suckling babes and animals, 439-40, 520.
Sudis gigas. *See* Arapaima.
Sugar-cane, 315, 897.
Sugar-cane. Growing and Manufacture, 220-6.

Sugar-cane Mill, 486.
Sun-bird. *See* Eurypyga.
Sun-fish. *See* Luganani.
Swallow. *See* Hirundo.
Swamp Savannah, 586.
Swartzia grandiflora *Benth.*, 707.
Swartzia tomentosa *DeC.*, 494, 701.
Syenite, Schistous, 302.
Sylvia cyanocephala. *See* Dacnis.

Tabernaemontana alba *Mill.*, 758.
Tabernaemontana odorata *Vahl.*, 541.
Tachigalia paniculata *Aubl.*, 701.
Tachigalia pubiflora *Benth.*, 707.
Tachypetes aquila. *See* Fregata.
Tachyphonus surinamus *Linn.* (Tanagra ochropygos *Gm.*), 339.
Tachyphonus versicolor *d'Orb.*, 339.
Tamarindus indica *Linn.*, 200, 201.
Tambicabo Island, 755.
Tamonea mutica *Pers.*, 781.
Tanagra cayana. *See* Euphonia.
Tanagra episcopus *Linn.* ? (T. sayaca *Linn.*) Blue Sacky, 201.
Tanagra gularis. *See* Paroaria.
Tanagra jacapa. *See* Rhamphocoelus.
Tanagra magna. *See* Saltator.
Tanagra nigerrima. *See* Nemosia.
Tanagra ochropygos. *See* Tachyphonus surinamus.
Tanagra olivascens. *See* T. palmarum.
Tanagra palmarum *Wied.* (T. olivascens *Linn.*) Brown sacky, 201, 339.
Tanagra sayaca. *See* T. episcopus.
Tantalus loculator *Linn.* Big Glutton, 887.
Tapacuma Lake, 641.
Tapir Americanus. Maipuri, 842.
Tapura guianensis *Aubl.*, 701.
Taquiari or Comuti Range, 753.
Tatu, 322, 397, 445, 592.
Tephrosia cinerea *Pers.*, 781.
Tephrosia toxicaria *Pers.*, 781.
Termites. *See* Ant.
Testudo arrua *Humb.* *See* Emys amazonica.
Testudo tabulata *Walb.*, 922.
Testudo tracaja (T. terekay *Humb.*) *See* Emys tracaja.
Tetrao, 782.
Tetrao guianensis. *See* Odontophorus.
Thalurania furca *Berl. Hart.* (Trochilus furcatus *Linn.*), 312.
Thatch, 463.
Theatres, Georgetown, 106.
Theristicus caudatus *Wagl.* (Ibis albicollis *Lath.*), 887.
Thevetia nereifolia *Juss.*, 407, 553.

Thread, 463.
Tiaridium indicum *Leh.*, 154, 200.
Tibouchina aspera *Aubl.*, 839, 863.
Tiger-fish. *See* Platystoma.
Tiger-snake. *See* Coluber pantherinus.
Tigrosoma brasiliensis (Ardea b. *Linn.*), 337.
Tigrosoma lineatum *Bodd.* (Ardea tigrina *Gm.*), 337.
Tillandsia, 318, 519, 922, 939, 943.
Tillandsia usneoides *Linn.*, 893.
Timbers for Ship-building, 701.
Time, Computation of, 464-5,548-9.
Tinamus tao *Tem.* (Crypturus t.), Maam, 339, 353.
Tobacco, 456.
Tocoyena longiflora *Aubl.*, 320.
Torenia parviflora *Hamilt.*, 708.
Toucan. *See* Rhamphastidae.
Town Hall, Georgetown, 103.
Tribal Relationship, 452.
Trichomanes heterophyllum *Willd.*, 768.
Trichomanes pellucens *Kunze*, 768.
Trichomanes plumula *Presl.*, 768.
Trichospira menthoides *Humb. Bonp.*, 781.
Trigonocephalus atrox. *See* Lachesis.
Triplaris americana *Linn.*, 541.
Trochilus campylopterus. *See* Campylopterus.
Trochilus flavifrons, 864.
Trochilus furcatus. *See* Thalurania.
Trochilus mango. *See* Lampornis violicauda.
Trochilus mellivorus. *See* Florisuga.
Trochilus moschatus. *See* Chrysolampis.
Trochilus pectoralis. *See* Lampornis gramineus.
Trochilus petasophorus. *See* Petasophora.
Trochilus pygmaeus. *See* Phaethornis.
Trogon melanopterus. *See* T. viridis.
Trogon melanurus *Gould.*, 747.
Trogon viridis *Linn.* (T. melanopterus *Sw.*), 339.
Trombidium sp. *See* Bête Rouge.
Tropidurus torquatus *Wied.* (Ecphymotes t. *Dum.*), 854.
Truli palm. *See* Manicaria.
Trumpet-bird. *See* Psophia.
Trumpet tree. *See* Cecropia.
Trupial. *See* Cassicus.
Tryothorus. Wren, 243.
Tunny. *See* Scomber.
Turf-Club, Georgetown, 107, 182-4.
Turnera apifera *Mart.*, 863.
Turnera aurantiaca *Mart.*, 863.
Turnera guianensis *Mart.*, 863 .
Turnera passiflora *Benth.*, 863.

Turtle Eggs, Season, etc., 716, 755.
Turu. *See* Oenocarpus.
Twasinki Range, 751.
Tyrannus crudelis. *See* T. melancholicus.
Tyrannus flavus. *See* Pitangus sulphuratus.
Tyrannus lictor. *See* Pitangus lictor.
Tyrannus melancholicus *Vieill.* (T. crudelis *Sw.*), 201.
Tyrannus sulphuratus. *See* Pitangus sulphuratus.

Uca una *Marg.*, 575.
Ucides cordatus *Linn.* (Cancer c.), 575.
Ucriana Humboldtii *Spreng.*, 494.
Umbrella Ant. *See* Cushy Ant.
Unxia camphorata *Linn.*, 863.
Uraniae, 311.
Urari, Ourari, Wurali, etc., 945-961. *See* Strychnos.

Vampire. *See* Phyllostoma.
Van Günthern. Manager of Greenwich Park, 670, 693.
Vanilla aromatica *Sw.* (V. guianensis *Splitg.*), 300, 519.
Vaqueiros, 875-7.
Vespa morio, V. nidulans, 507.
"Victoria," Corial of the Expedition, 273, 686, 699.
Victoria regia *Schomb.*, 797.
Vine-rope. *See* Bush-rope.
Violin, 404.
Vississi duck. *See* Anas viduata.
Vitex capitata *Vahl.*, 763.
Vitex umbrosa *Sw.*, 763.
Vochysia guianensis *Aubl.*, 541, 725.
Vogel, Dr. Leader of Expedition to the Niger, 29.
Voigstedt: Schomburgk's home, I.
Vultur papa *Linn.* King Vulture. *See* Gypagus papa *Linn.*

Waihahi. *See* Murder charge.
Wai-ipukari Inlet. 836-7.
Waika. *See* Akawai.
Waini Mouth, Sandbank at, 286-96.
Waini River, 575.
Waltheria involucrata *Benth.*, 781.
Walton, Mr.: Artist to the Expedition, 31, 210.
Wandering Ants, 643.
Waraputa Mission, 730-39.
War-clubs, 787, 914.
Warina Village, 503.
[Warracabra]. *See* Psophia.
Warrau Indians. Physical Characteristics, 304, 322-3.
Warrau Indians. Manners, Customs, 430-66.
Warrau Indians. Religious Beliefs, 453-60.

Wassi Poison, 744, 967.
Water-dog. *See* Lutra.
Water haas. *See* Hydrochaerus.
Weapons, Manufacture of, 914.
Wedelia hispida *Humb. Bonp.*, 888.
Weiburg, Lieut., 853.
Weyra. *See* Lacis.
Whipping for Fish, 721.
Whomana River, 571.
Widowhood, 598.
William. Warrau Chief of Aruka River, 306-8, 327-8.
Windsor Castle, Pln., 226.
Witch, Old. *See* Crotophaga.
Woodpecker, 339.
Wood-skin, 665.
Woman's Work, 434-6, 563.
Wren, 243.
Wrestling, 524-5.
Writing and Reading, 885.
Wulfia platyglossa *DeC.*, 863.

Xiphidium, 541.
Xiphostoma Cuvieri. *See* Hydrocynis.

Yaku. *See* Penelope cristata.
Yam. *See* Dioscorea.
Yawahu. *See* Hebu.
Yellow Fever, 206-9, 672-4, 676.
Youd, Rev., 252, 713, 730, 856, 884.

Zeelandia, Pln., 212-8, 272.
Zingiberaceae, 937.
Zingiber officinale, *Rosc.*, 116.
Zoological Gardens, London, 22.
Zygopetalum, 584.
Zygopetalum rostratum *Hook.*, 369, 392, 611.

SMITHSONIAN INSTITUTION LIBRARIES
3 9088 00616 1350